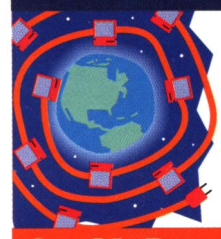
MacWEEK

04.22.96 | *The Newsweekly for Macintosh Managers* | VOLUME 10 NUMBER 16

DESIGNS ON THE WEB



PageMill, Beyond-Press hit Version 2

See GA, Page 8

ROAD TO WWDC

Developers skeptical as Apple pushes new tech

By MacWEEK staff

There's angst in the Mac developer community today, and it's not all in response to Apple's second-quarter loss.

Many developers question Apple's continuing support for numerous technologies on its plate, and some are holding back their adoption of innovations, including OpenDoc, QuickDraw 3D, QuickTime VR and QuickTime Conferencing. With the Apple Worldwide Developers Conference less than a month away, developers are seeking assurance that the company will back up its words with action.

"Apple doesn't jump into a new standard with both feet," said Chuck Shotton, vice president of Quarterdeck Corp. of Marina Del Rey, Calif.

Developers that have supported PowerTalk, publish and subscribe, QuickDraw GX, and other faltering Apple technologies said they feel justified in their hesitation.

"We really want to support OpenDoc, but we're a little un-

See WWDC, Page 66

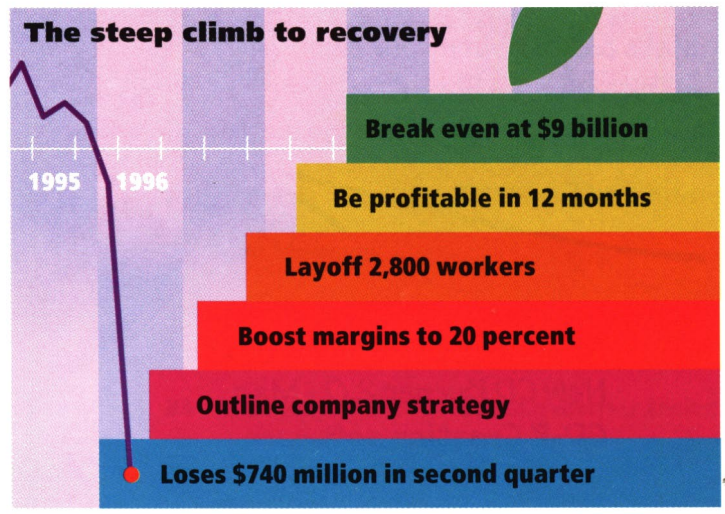
Apple seeks Net gains in wake of record loss

Analysts approve Amelio direction

By Stephen Howard

Apple slid to the nadir of its bumpy financial curve last week, detailing the full scope of its second-quarter losses and cooling any hopes of a quick fix. Looking to the future, CEO Gilbert Amelio presented the Internet as the key to Apple's recovery.

The expected loss of $700 million expanded to $740 million in the final tally (see 04.01.96, Page 1). Worse news came in the report that sales had dropped 18 percent, from $2.6 billion a year ago to $2.2 billion in 1996, on shipments of about 900,000 units. Gross profit margins collapsed to 9 percent during the quarter, ended March 29. According to Chief Financial Officer Fred Anderson, this record low was caused by "unusual action to move the excess inventory [chiefly] through special pricing programs."



The company's gross margin goal is about 20 percent, he said. The $388 million inventory write-down, also larger than expected, should ease margin pressure, Anderson said.

In an unexpected revelation

See Apple, Page 68

REVIEW

Latest round of PCI Macs punch up the clock speed

By Henry Norr

To most Americans, a speed bump is something designed to slow you down — an impediment placed in the roadway to force drivers to limit their speed. But in Apple lingo, a speed bump has just the opposite effect: It's the company's term for boosting the performance of existing models.

Apple debuts PCI logic-board upgrades and PC compatibility cards.
See Page 4

That's what Apple is doing this week, with the introduction of five new PCI-based Power Macs. Except that they ship with System 7.5.3 and a bundled copy of the new Apple Internet Connection Kit Version 1.1 (including Netscape Navigator 2.0), there's not much new about these systems, but they all deliver welcome increments in performance.

The most dramatic improvement comes at the low end of the business Power Mac line. There, the 7200/120, featuring a 120-MHz PowerPC 601, replaces the two original 7200 models, which had 75- and 90-MHz 601 processors and, out of the box, no cache; a 256-Kbyte Level 2 cache also becomes standard except on a bare-bones configuration with only 8 Mbytes of RAM.

The net effect, as measured by MacBench 3.0, is an increase of

See Speed, Page 66

NEWSPAPER SECOND CLASS

Mac signal strong at NAB convention

Third parties up the ante in Vegas

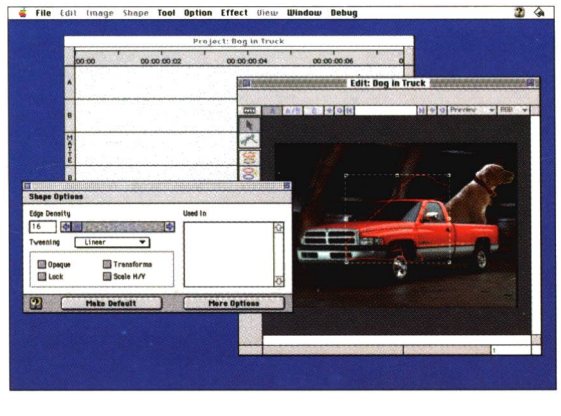
By MacWEEK Staff

Las Vegas — In an object demonstration of the Mac's enduring presence in the realm of broadcasting and multimedia, a profusion of new products debuted last week at the National Association of Broadcasters annual trade show here.

▶ **The 3DO Co.** unveiled an MPEG-2 system on PCI-based Power Macs for real-time encoding and decoding of digital video.

MPEGXpress 2000, slated to ship in the third quarter for $19,995, will comprise two PCI

See NAB, Page 67



Avid Technology's Elastic Reality 3.0 adds animation capabilities to the warping, morphing, compositing and color-correction tool.

Apple plugs into myriad interfaces

By Kelly Ryer

Las Vegas — Increasing the jackpot of shipping Mac products, attendees got a glimpse of future directions for Apple and one of the platform's major players at the National Association of Broadcasters show here last week.

Apple used its forum on QuickTime to map out directions Mac hardware will take in the wake of PowerPC Platform-based systems, reportedly due this fall.

Central to Apple's plans is the integration of industrywide standards into the Mac platform. Explaining this trend, Tim Schaaff, Apple engineering manager for QuickTime, said, "If we don't

See Directions, Page 69

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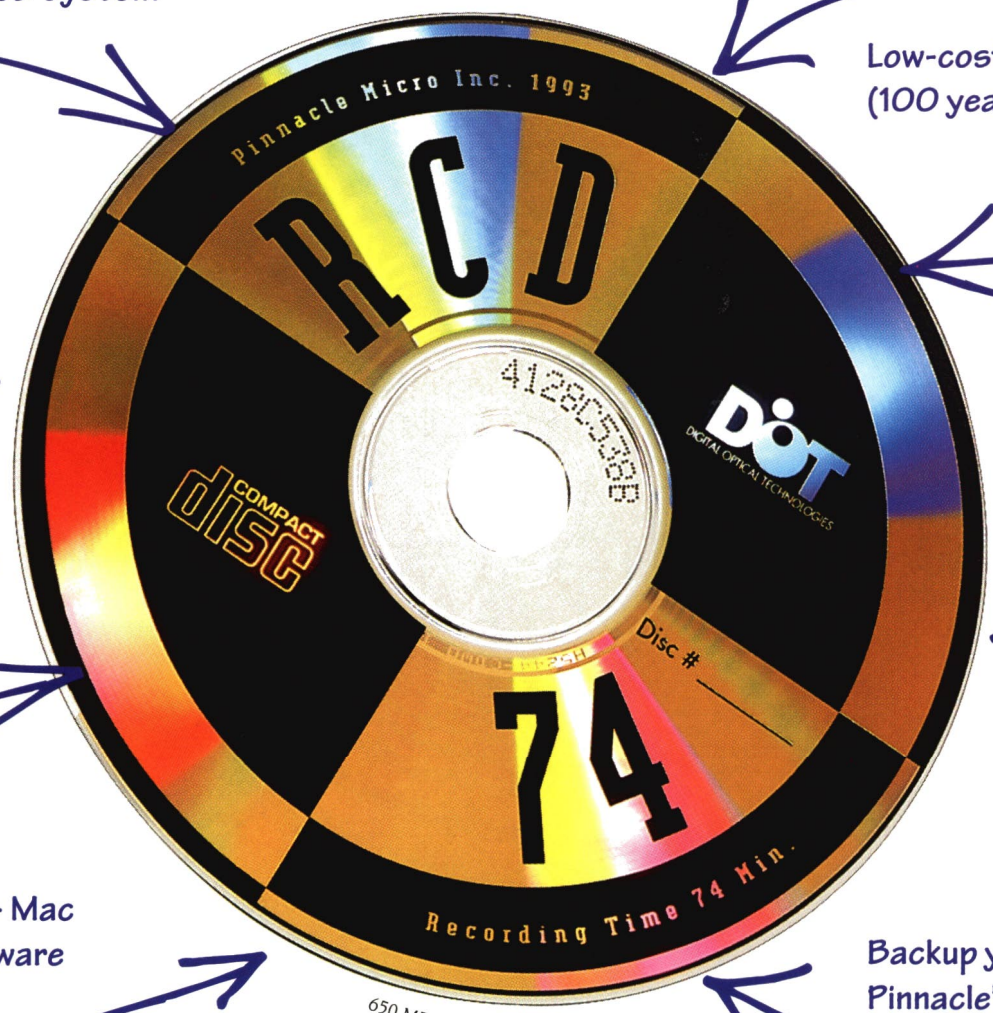

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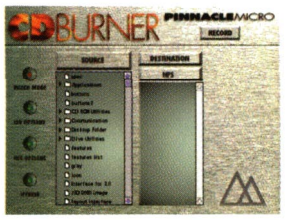

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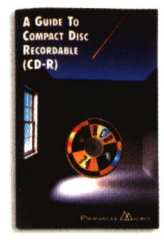

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MacWEEK

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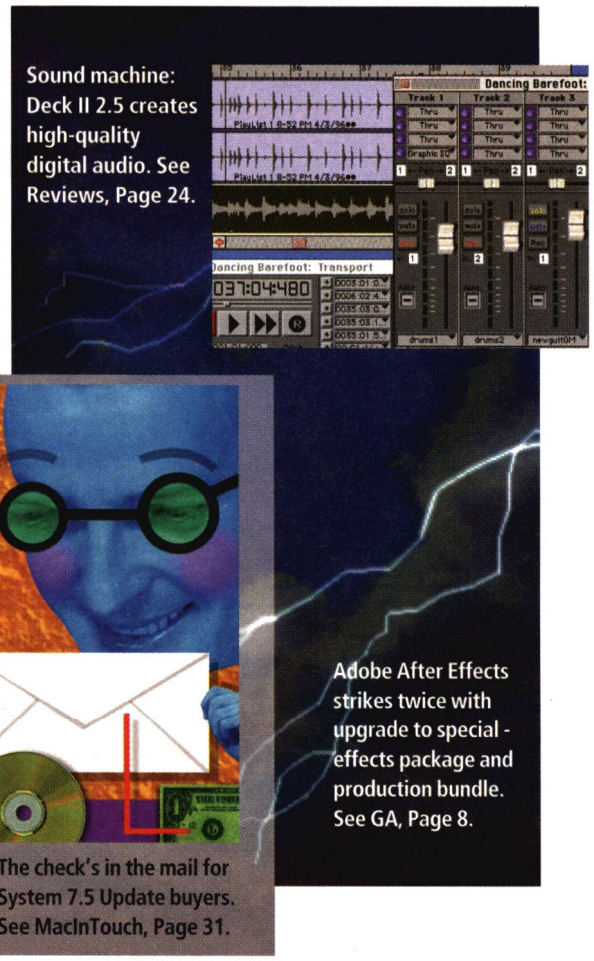
Sound machine: Deck II 2.5 creates high-quality digital audio. See Reviews, Page 24.
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Adobe After Effects strikes twice with upgrade to special-effects package and production bundle. See GA, Page 8.
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31 SOLUTIONS

On-line services help maintain corporate users' comfort levels in an otherwise frenzied and confusing Internet world.

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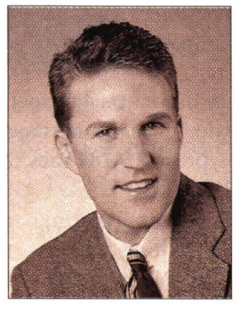
MACWEEK INSIDER JAMES STATEN

Congratulations, Apple

Please join me in offering my most sincere congratulations to Apple on the occasion of its quarterly loss. I couldn't be prouder of the folks in Cupertino. While difficult to swallow, this bitter news signals a positive shift that I hope continues. In fact, I hope to report further quarterly losses in Apple's future.

Why? Because the only way the Mac market will grow is for Apple to give ground in hardware sales to ensure the success of Mac OS licensees.

Dataquest Inc. predicted in March that the U.S. personal computer market would experience slow growth in 1996. The majority of the growth will be overseas, according to the San Jose, Calif.-based market research firm, and Apple's biggest licensees are poised to take advantage in these markets. Motorola Inc., Pioneer Electronic Corp., UMAX Computer Corp. and Goldstar Technology Inc. — even licensees still in the shadows such as Acorn Computer Group Ltd. and Olivetti & Co. SpA — have the backgrounds and local ties necessary to drive the Mac OS in Asia and Europe.



Yet Apple, which is selling 59 percent of its products outside the United States, will find a strong clone maker overseas just as threatening as one in the United States. Against its corporate instincts, Apple will have to concede some sales to these new friends and competitors.

The company will have to become a voracious marketing partner. It will have to learn how to sell the Mac OS without selling the Macintosh. It might even need to escort some of its loyal customers over to these licensees. Sound crazy? Business as usual just lost three-quarters of a billion dollars.

I'll even go so far as to suggest Apple give commissions to its sales staff for losing sales to clone vendors. The Mac OS licensing strategy doesn't have a prayer without its clone partners experiencing early success.

Further, the best way to drive that success is to improve the image of the Mac OS, to make it a clear advantage once again. Right now, the best chance to do that is through a compelling Internet strategy that positions the Mac OS as the premier platform for getting on the Web.

The need for such a plan is becoming more urgent by the minute. The longer the question of Apple's Internet strategy goes unanswered, the louder the cry of fear grows that Apple isn't prepared for the Internet.

Apple's best chance is through a compelling Internet strategy.

According to sources, Apple's Internet strategy will be focused on the efforts of third-party developers. While this is fine and good, Apple needs to show a deeper commitment and a means of integrating the Net into its platform.

Users need to hear that the Mac OS makes it easy to get on the Internet; that even though they bought the minority platform, Mac owners will have access to the latest Internet technologies as they become available; and that the Mac OS will allow them to make better use of the Internet faster.

To draw users and drive clone sales, Apple needs to provide developers with great Internet tools. Developers want help to make their applications Internet-ready as quickly as possible. Users want to know that they can grab something off the Internet and work with it right away using the applications they already own. And neither group wants to wait for OpenDoc.

Apple could achieve the needed integration by building solutions based on Apple events, AppleScript and Macintosh Drag and Drop. One smart move would be to embrace the Internet as a medium for the company's own technical support. Right out of the box, users should be able to get on the Internet and gain immediate access to Apple answers. If the company integrated this feature into Apple Guide, it would suddenly have a thorough, built-in solution — a new Mac advantage based on Internet integration.

Apple should create some of those solutions and let the clone makers reap the rewards. □

James Staten is associate editor/Gateways. Tell him how Apple can improve its Internet strategy at james_staten@macweek.com.

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Symantec opens Café

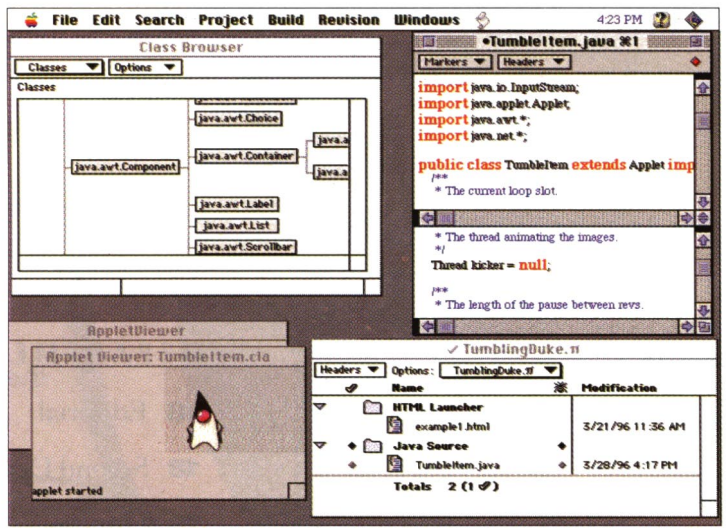
Java environment replaces Caffeine

By Clifford Colby

Symantec Corp. this week expects to ship Café, its cross-platform Java development environment based on the company's C++ coding tools. Symantec said the release will replace Caffeine, the Java plug-in it released in March.

Though based on Caffeine and bundled with Sun Microsystems Inc.'s Java Development Kit for the Mac, Café adds a handful of new capabilities. The development environment includes a new Java compiler, which the company said runs three times faster than Sun's javac compiler. Café also comes with a graphical class browser and editor as well as a graphical source-code debugger for tracing errors in Java code.

Symantec's Project Manager for organizing code is part of the package, as is Café Studio, a suite of visual tools, which assists developers in creating Java applet layouts that include buttons and menus. Symantec said Café is fully Apple events-scriptable and recordable and comes with 90 sample Java applications.



Symantec's Café features an integrated class browser that shows relations between class elements. The Java tool set also includes a debugger.

The company said it plans to add to Café in May a just-in-time compiler, which will compile Java code into PowerPC or 680x0 machine code on the fly.

Symantec is offering Café for $99.95 through July; thereafter, the application will cost $299.95. The Mac version joins Café for Windows 95 and Windows NT machines, which shipped in March.

Symantec Corp. of Cupertino, Calif., can be reached at (408) 253-9600 or (800) 441-7234; javainfo@symantec.com; http://www.symantec.com. □

Apple preps DOS cards, logic-board upgrades

By Joanna Pearlstein

Apple said this week it will ship several PCI Power Mac upgrades in May and a pair of new DOS coprocessor cards in June.

The $1,299 Power Macintosh 7600 Logic Board Upgrade will transform a 75- or 90-MHz Power Mac 7200 into a 7600. The $1,799 Power Macintosh 8500 Logic Board Upgrade will turn a Mac Quadra 800 or 840AV system into a Power Mac 8500.

Both the 7600 and 8500 Logic Board Upgrades lack PowerPC processors — these systems house the CPU on removable daughter boards — so users must also purchase one of two new Processor Upgrade Cards. Boards with 120-MHz or 132-MHz chips will be $599 or $899.

Owners of Power Mac 7500, 8500 and 9500 machines will also be able to purchase these processor cards for a speed boost.

For users seeking to give their PCI Macs a split personality, Apple will deliver two Intel-standard PC Compatibility Cards: one 100-MHz Intel Pentium-based card with 8 Mbytes of RAM costing $1,049, and one with a 100-MHz Cyrix 5x86 that goes for $799. Apple said the cards run Windows 3.1, Windows for Workgroups 3.11 and Windows 95, but not Windows NT and OS/2.

Unlike earlier DOS Compatibility Cards, which were restricted to a single Mac model each, Apple's newest offerings work in any PCI Mac. However, Apple will sell a Power Mac 7200/120 PC Compatible system bundled with either card.

"I think they're kind of silly," said Kimball Brown, vice president of PC Systems at San Jose, Calif.-based Dataquest Inc. "For the price of [a card], you could buy a cheap PC."

Jack Gold, program director at the META Group Inc. of Stamford, Conn., agreed. "Why would I go out and spend $700 or $800 just to run Windows software?" Gold asked. □

3M to unglue printing and image-storage businesses

By Matthew Rothenberg

In a move that will bring a new face to Mac pre-press, 3M of St. Paul, Minn., last week announced plans to spin off its imaging and data-storage businesses into a new, publicly owned company.

The new business, christened Imation Corp. and based in Oakdale, Minn., will be launched in July; 3M shareholders will receive 10 shares of Imation stock tax-free for every share of 3M. William T. Monahan, group vice president of the 3M Electro and Communication Systems Group, was named CEO of the new company.

The spinoff will encompass 3M's printing and publishing systems, photographic and medical-imaging lines, and data storage products, as well as service and support for its electronics products. 3M projected Imation's annual sales at $2.25 billion, based on 1995 revenues from these businesses.

The company said Imation will restructure its business holdings over the next 18 months. Seventy percent to 80 percent of 3M employees in those divisions to be spun off were offered voluntary severance packages in February. 3M said it hoped to reduce staff by about 2,000, to around 11,000 employees.

In addition, 3M has merged its color-photography and medical-imaging businesses in preparation for the spinoff, and 3M said it will eliminate its audio and video businesses. Imation will combine technology and operations among businesses, 3M said.

Mac-based Imation holdings will include the Rainbow proofer line and 3M's removable-storage products. □

Nagel leaves Apple R&D for AT&T

Amelio to fill in during exec hunt

By Stephen Howard

This is the last week on the job for Apple R&D chief David Nagel and the second week in the search for a replacement.

Nagel, senior vice president of Apple Worldwide Research and Development, resigned to become president of AT&T Laboratories, a division of AT&T Corp. based in Murray Hill, N.J.

Apple said it was actively seeking to fill Nagel's job; CEO Gilbert Amelio is acting head of R&D until one is found. Rumors abounded last week that the short list started with Ellen Hancock, the respected ex-IBM Corp. executive who became chief operating officer at National Semiconductor Corp. of Santa Clara, Calif., last fall.

Hancock's prepared response: She's happy at her current job and has had "no conversations with Apple" about leaving National.

Nagel's top Apple project has been Copland, the next major update to the Mac OS; Apple said it did not expect his absence to slow its release.

David Nagel got the message when AT&T Labs called.

Pieter Hartsook, editor of The Hartsook Letter in Alameda, Calif., said Apple is losing a good technologist but gaining flexibility in re-evaluating product plans. Nagel's replacement "will be able to take a dispassionate look at projects," he said. "That's very hard for an insider to do."

Greg Galanos, president and CEO of Metrowerks Inc. of Austin, Texas, said: "I think this is a great career move for Dave, but I think this is also a great move for Apple. Having fresh blood in there is a good thing."

Several Apple employees and third-party developers noted that Apple suffered repeated delays in Copland and Power Mac CPUs on Nagel's watch. Some suggested he was not driven to ship products because of his extensive research background; Nagel first moved into a job in product development in 1993.

"Apple's obviously looking for a more product-oriented guy [who can] drive a product schedule to completion," said a source who worked with Nagel.

Others expressed disappointment at Nagel's departure. Brian Lawley, director of C++ and Java development tools at Cupertino, Calif.-based Symantec Corp., said: "If I look back over the past two to three years of what Nagel has done, it has been very positive. He saw the value of two technologies in particular, QuickDraw 3D and Apple Guide, and made sure they were successful." □

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VISIONTEK™

Xerox revs color lasers

By David Morgenstern

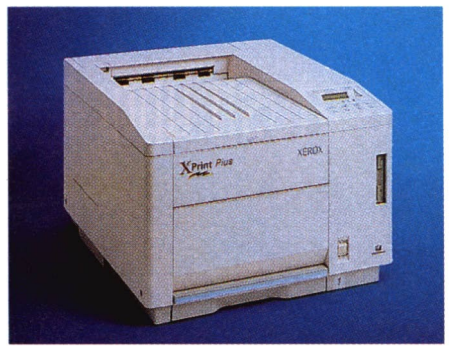
Moving its color laser line upscale, Xerox Corp. last week updated its XPrint line of color laser printers with improved color screening and job processing. The company also cut color laser costs across-the-board.

The new XPrint 4915 Plus, 4920 Plus and 4925 Plus printers have list prices of $4,995, $7,295 and $8,995, respectively. The new lower-cost models replace earlier XPrint models that were introduced last year (see 06.26.95, Page 4). The entry-level 4915 Plus is $1,900 less than its predecessor, the 4915.

The Plus printers incorporate new SIMM firmware for color imaging and document handling, Xerox said. Users who purchased XPrint 4915, 4920 and 4925 models this year can upgrade to the new features free; upgrades are $99.95 for earlier users.

The update includes Intelligent Color 2.0, the latest version of Xerox's color image-enhancement technology. It applies different screenings for various graphical elements on a page, such as photographic images, graphics, and black-and-white text, according to Xerox.

In addition, the firmware incorporates PhotoReal, the company's new frequency-modulated screening algorithms that reduce moiré artifacts; the update also smooths color gradient fills and sharpens text, Xerox said. The Plus models support Apple's color-management system, ColorSync 2.0, and can collate 100-page documents.



Xerox's new XPrint Plus series of color laser printers offers the company's latest screening algorithms. The entry-level XPrint 4915 Plus has a list price of about $5,000.

Outwardly similar to their forebears, the Plus models also use the same Hitachi engines, 25-MHz AMD 29030 RISC PostScript Level 2 processors and RAM configurations.

The printers come standard with LocalTalk, Centronics parallel and RS-232C serial interfaces; multiprotocol Ethernet and token-ring interfaces are optional.

The 4915 Plus offers 1,200-by-300-dpi interpolated resolution and comes with 16 Mbytes of RAM.

The 600-dpi 4920 Plus and 4925 Plus come standard with 16 and 24 Mbytes of RAM, respectively.

Xerox Corp. of Rochester, N.Y., can be reached at (800) 349-3769; fax (800) 532-9979; info@xerox.com; http://www.xerox.com. □

DayStar cuts prices, adds new clone model

By Joanna Pearlstein

DayStar Digital Inc. in May will add a dual-processor model to its clone lineup. The company also trimmed prices on shipping models last week.

Aimed at a more mainstream audience than the company's high-end four-processor models, the Genesis MP 300 will pack a pair of 150-MHz PowerPC 604 processors in the Genesis six-slot tower enclosure. A model with no RAM or hard drive will cost $5,971.

DayStar said the MP 300 will run up to 75 percent faster than a Power Mac 9500/132. Apple's system, with 16 Mbytes of RAM and a 1-Gbyte hard drive, costs about $4,300; a similar MP 300 configuration will cost about $7,000.

DayStar also lowered prices on its four-processor models: the 150-MHz MP 600 and 132-MHz MP 528.

An MP 600 with 32 Mbytes of RAM and a 2-Gbyte hard drive dropped to $13,069 from $17,499. An MP 528 packed with 16 Mbytes of RAM and a 1-Gbyte hard drive fell to $9,999 from $13,999.

In addition, DayStar released bare versions of the 600 and 528, which cost $10,971 and $8,971, respectively. Analysts said the stripped-down models will appeal to value-added resellers and do-it-yourself graphic artists, who can add arrays or different memory configurations.

DayStar Digital Inc. of Flowery Branch, Ga., can be reached at (770) 967-2077 or (800) 972-8711; fax (770) 967-3018; http://daystar.com. □

InfoDepot gets Web support

By Clifford Colby

Chena Software Inc. this month updated its InfoDepot project-management software with Web support and increased graphics capabilities.

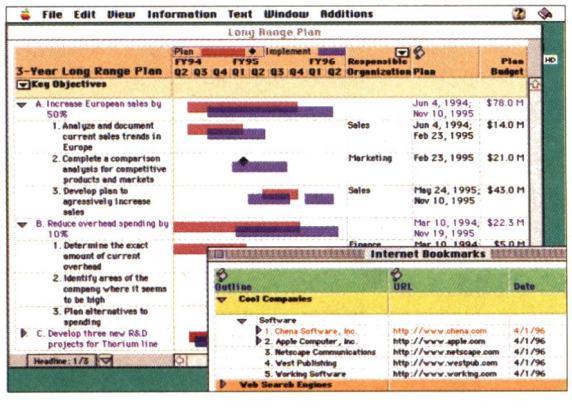
Version 2.5 of the $295 software lets users drag a URL (uniform resource locator) from a Web browser and drop it into an InfoDepot document; InfoDepot can now also open URLs from within a document. The free update comes with an Internet bookmark window that lets users organize URLs.

The update gives users more control over graphics; pictures can now be rotated. Also, boosting ease of use, when users drag an item into an InfoDepot document, it automatically creates a row containing the item.

Chena said the update is compatible with double-byte fonts. Version 2.5 also comes with Working Software Inc.'s Spellswell spelling checker and dictionary. The update's built-in Check Spell command launches Spellswell.

Users can download the updater software from the company's Web site; a floppy version is $9.95. In addition, the company said it expects to ship a Windows version of InfoDepot this summer.

Chena Software Inc. of Allentown, Pa., can be reached at (610) 770-1210 or (800) 245-4577; fax (610) 770-9266; chenasw@aol.com; http://www.chena.com.



The new Web-savvy version of InfoDepot lets users drag URLs into their documents as well as store and organize bookmarks.

RAID takes stage at NAB meeting

Storage vendors show new arrays

By David Morgenstern

A trio of storage companies last week took the wraps off new high-performance and entry-level arrays.

▶ **MicroNet Technology Inc.** at the National Association of Broadcasters show in Las Vegas unveiled its DataDock 7000, a new seven-bay enclosure for the company's DataDock hard drives and removable-storage modules. Slated to ship in June, the $3,995 Fast and Wide SCSI-2 unit will support hardware-controlled RAID levels 0, 1, 3 and 5. Each system will have a maximum capacity of 63 Gbytes, MicroNet said.

A 28-Gbyte configuration packed with seven 4-Gbyte drives will be priced at $23,999; a model holding 63 Gbytes will cost $33,999.

DataDock 7000 will feature three redundant, load-sharing power supplies and fans; users can hot swap these components as well as hard drive modules. MicroNet will also offer currently unpriced network and remote paging options. The chassis will be available in tower and rackmount versions.

In addition, MicroNet released new software-controlled two-drive arrays optimized for digital video editing packages from Data Translation Inc. and Truevision Inc. Versions equipped with removable DataDock drives start at $3,395; nonremovable arrays in capacities from 4 to 17 Gbytes cost $2,995 to $6,710.

▶ **Mega Drive Systems Inc.** played to a high-performance audience at NAB with Aria, a Fibre Channel-Arbitrated Loop (FC-AL) version of its Enterprise E-8 RAID system.

Expected for release in the third quarter, the unpriced system will sport eight slots for 9-Gbyte FC-AL 3.5-inch hard drive modules. Similar to the current Fast and Wide SCSI-2 model, Aria will offer hardware-based RAID levels 0, 1 and 5.

The unit will let users hot swap drive modules; it will support hot-spare fans and power supplies. The systems will come in both tower and rackmount versions.

FC-AL is a serial SCSI-3 standard that has a maximum data transfer rate of 200 Mbytes per second. Mac users will be able to connect to Aria via PCI; Transoft Corp. at NAB introduced an FC-AL PCI card for Macs, due this spring (see 04.01.96, Page 4).

▶ **La Cie Ltd.** next week will release its PCI RAID, a new series of Fast and Wide SCSI-2 array packages.

The $1,299 2-Gbyte or $1,499 4-Gbyte systems include a Quantum Atlas drive, an Adaptec 2940W PCI card and Trillium Research Inc.'s Remus software, which provides RAID levels 0, 1, 4 and 5. Additional 2- and 4-Gbyte drives cost $899 and $1,099, respectively.

MicroNet Technology Inc. of Irvine, Calif., can be reached at (714) 453-6100 or (800) 800-3475; fax (714) 453-6101; http://www.micronet.com.

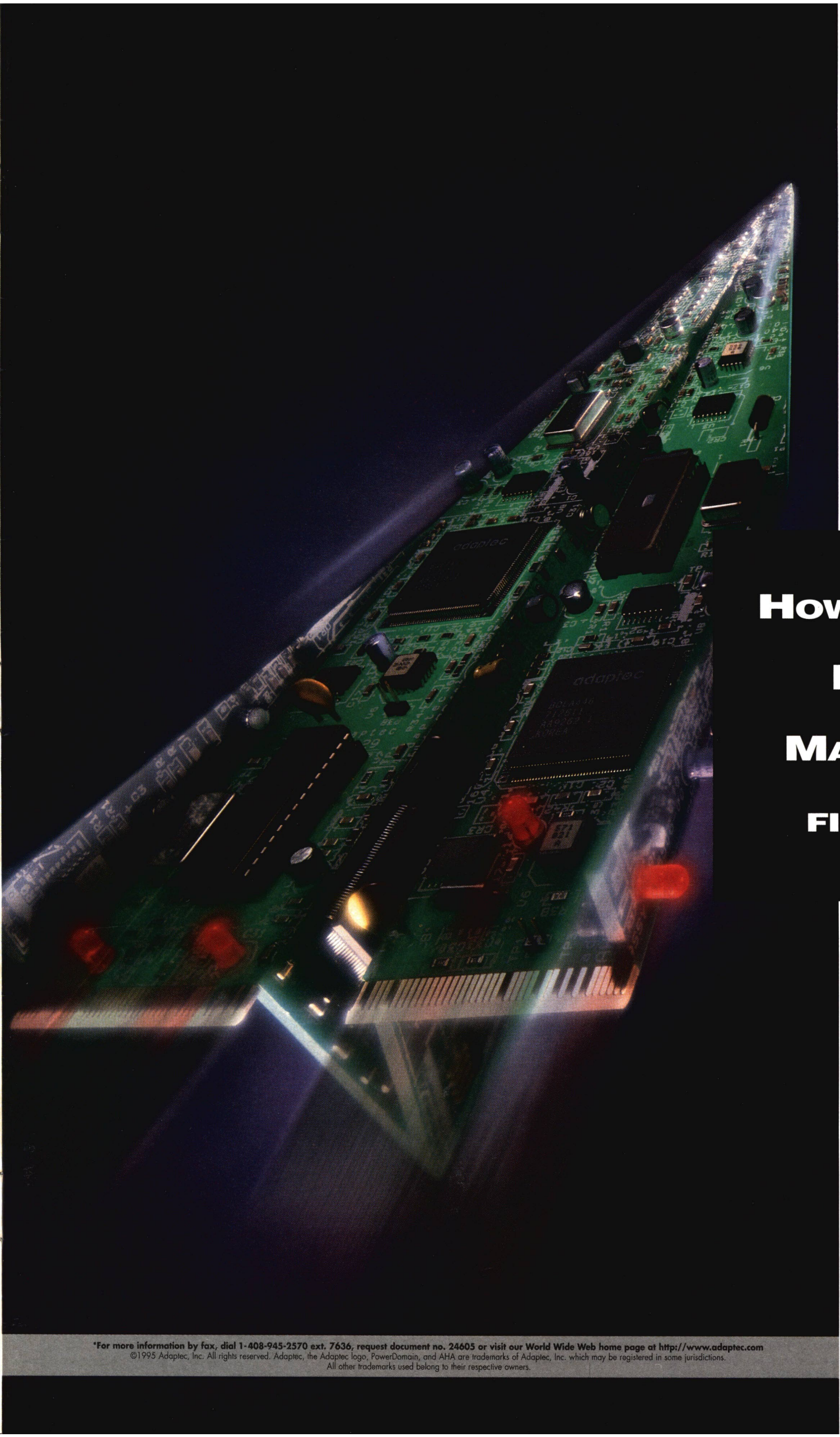
Mega Drive Systems Inc. of Beverly Hills, Calif., can be reached at (310) 247-0006 or (800) 664-6342; fax (310) 247-8118; http://www.megadrive.com.

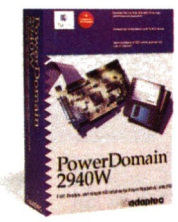
La Cie Ltd. of Beaverton, Ore., can be reached at (503) 520-9000 or (800) 999-0143; fax (503) 520-9100; http://www.lacie.com/. □

For the record

The 04.15.96 story on WebStar (Page 1) misstated Higgs America's Web server installation; the company is running WebStar 1.2.5 but has not installed Open Transport.

The 04.15.96 story on Visioneer Inc.'s PaperPort Vx (Page 6) gave an incorrect price for the desktop scanner; it costs $299.





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Adobe preps PageMill 2: Upgrade to add tables

By Joanna Pearlstein

Bringing tables and a spelling checker to its HTML editor, Adobe Systems Inc. this week announced PageMill 2.0.

Due in July, the $99 PageMill 2.0 will display HTML source code and check spelling of documents. Users will be able to create WYSIWYG tables by clicking on an item in the PageMill tool bar or dragging and dropping tables from Microsoft Excel; the upgrade will also support nested tables.

The new version will let users view and edit HTML code, and it will support additional HTML tags, such as the embed and wrap-around text tags. A new search-and-replace function will let users find and replace text, including entries in tables and pop-up menus.

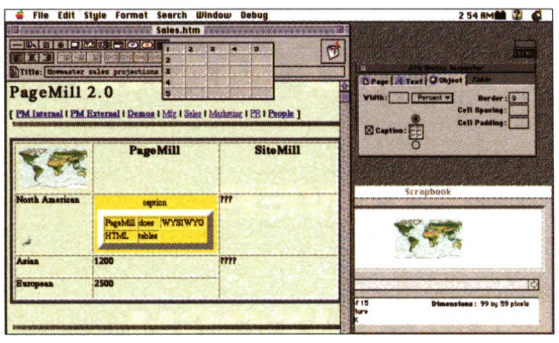


Table it: PageMill 2.0 will let users create WYSIWYG tables by clicking on an item in the tool bar or dragging and dropping Excel tables.

Web designers will also be able to drop Adobe Acrobat Portable Document Format (PDF) files directly into PageMill documents; when a user requests a Web page with an embedded PDF file, Adobe's forthcoming Amber plug-in will display the image within the HTML page. Adobe said a single PDF image can be used at different resolutions across multiple pages.

Imported QuickTime movies can be played within Web pages. Sound files dropped into PageMill will be converted automatically into the .AU audio file format.

Robert Toups, director of Internet operations at Link, The College Magazine of New York who was briefed by Adobe on PageMill 2.0, said he was excited about the new version of PageMill. "[Version 1.0 has] been a

See PageMill, Page 10

Version 2.0 of Astrobyte's BeyondPress XPress-to-HTML conversion tool will support image mapping, allowing users to create active areas within images.

BeyondPress 2.0 will extend graphics tools

By Rebecca Gulick

Astrobyte LLC this month will ship a major upgrade to its HTML conversion XTension for QuarkXPress documents.

BeyondPress 2.0 will cost $595, the same as the original version (see 03.06.95, Page 16), and will improve image-handling and automation capabilities, Astrobyte said.

Version 2.0 will let users crop and scale embedded images and specify attributes such as border width and text to be substituted in a text-only layout. Users will be able to reduce the color palette, make regions of images transparent, and convert images into GIF or JPEG. The upgrade will

See BeyondPress, Page 10

IMS board raises res, improves performance

By Rebecca Gulick

Integrated Micro Solutions will redouble its graphics- and video-accelerator efforts this week with its TwinTurbo-128M8, a new display board for PCI Power Macs that packs 8 Mbytes of video RAM.

The $1,199 TwinTurbo-128M8 is based on IMS' own TwinTurbo-128 Plus processor. According to IMS, the new chip employs very large-scale integration technology and improves performance by 20 percent to 30 percent over the TwinTurbo-128 processor used in IMS' earlier TwinTurbo-128M. The new board does not replace the $699, 4-Mbyte TwinTurbo-128M; instead, it competes with other 8-Mbyte accelerator boards, such as the $999 MGA Millennium from Matrox Graphics Inc. of Montreal and the $1,099 Imagine128 from Number Nine Visual Technology Corp. of Lexington, Mass. (see 04.01.96, Page 41).

The TwinTurbo-128M8 supports 24-bit color at a maximum resolution of 1,600 by 1,200 pixels, IMS said. The board offers a refresh rate of 100 Hz at up to 1,152 by 870 pixels and a line-draw rate of 35 million pixels per second, according to the company.

IMS said the board can be used as an MPEG player. While not a QuickDraw 3D accelerator, it supports Apple's QuickDraw 3D RAVE (Rendering Acceleration Virtual Engine) technology without modification. The board offers dual connectors to support any Mac or Intel-standard PC monitor. It also supports millions of colors on high-definition television monitors at a resolution of 1,920 by 1,080. In addition, the board is compatible with portrait monitors, IMS said.

A linear zoom feature allows users to magnify a section of the screen instantly and without the blocking effects that pixel replication can cause, the company said.

Integrated Micro Solutions of San Jose, Calif., is at (408) 369-8282; fax (408) 369-0128. □

After Effects update strikes twice

By Kelly Ryer

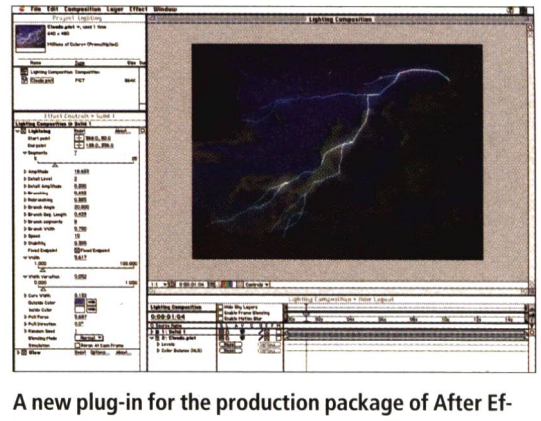
A free update to Adobe After Effects may spark interest among users of the video-compositing and special-effects software. Version 3.1 adds several features to the $995 basic After Effects package and the $1,995 After Effects Production Bundle, which includes plug-ins designed for film and broadcast professionals.

Version 3.1 of the basic package takes advantage of DayStar Digital Inc.'s Genesis MP multiprocessor machines to accelerate plug-in effects.

New plug-ins in Version 3.1 include Unsharp Mask; Remove Color Matting; and Write-on, which generates animated brush strokes and writing. The upgrade adds support for several new file formats, including TIFF and Targa graphics files as well as MACE (Macintosh Audio Compression Expansion) and .AU audio formats.

Besides the other features available from the basic package, Version 3.1 of the production bundle features a plug-in for creating lightning and sparking effects.

The Lightning plug-in incorporates more than 20 controls, including detail level, branch angle, colors and speed. Adobe said the plug-in can generate widely varying effects for animations and still images.



A new plug-in for the production package of After Effects 3.1 will animate lightning effects. Users can define more than 20 variables, such as detail level, branching and width.

Adobe Systems Inc. of Mountain View, Calif., can be reached at (415) 961-4400 or (800) 628-2320; fax (415) 961-3769; http://www.adobe.com.

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BeyondPress

From Page 8

also support new Web features such as client- and server-side image maps.

BeyondPress 2.0 will include support for Apple-events scripts, enabling users to automate the conversion of a variety of page elements. The upgrade will include a sample script that can convert any word processor or text file, image, or XPress document into HTML code.

Version 2.0 will feature an enhanced Document Content palette that will make it easier for users to rearrange the contents of an XPress document. The upgraded palette will be able to handle grouped elements as a single graphic.

Users will be able to define their own HTML styles and map XPress style sheets to them. For documents that do not use style sheets, the program will support font-size mapping, which determines a style based on the size of the original font.

BeyondPress 2.0 will be able to convert tabular data into HTML tables, and it will let users set URL (uniform resource locator) links from within XPress. Version 2.0 will add features to help spruce up XPress documents, including background colors and tiles, colored links, and styled text. It will also be able to convert images or text into anti-aliased graphics.

Daniel Brogan, publisher at 5280 Publishing Inc., which publishes two local magazines from its headquarters in Denver, said the enhanced graphics handling is the most significant improvement to BeyondPress 2.0. "I can get most of a [magazine] issue converted to HTML without making a detour to [Adobe] Photoshop," Brogan said.

BeyondPress 2.0 will preserve table attributes when converting documents from QuarkXPress to HTML.

"I'm playing with [the idea of] using it as a full-time development tool to create from scratch — using it like [Adobe Systems Inc.'s] PageMill," Brogan said. "It's almost getting to the point where it could be used like that."

Desiree Perry, on-line graphics editor at the St. Petersburg Times in Florida, agreed. "We're actually using it to design things," she said.

Perry praised the upgrade's support for progressive JPEG graphics, its GIF palette and its ability to place shared graphics into a common article subfolder. "It does a slick job of compressing graphics — better than I'm capable of doing in Photoshop," she said.

Upgrades will be $59 through May, and users who bought BeyondPress 1.0 after Feb. 1 will be able to upgrade free.

Version 2.0 will also be able to be extended by third-party developers, Astrobyte said. Its BeyondPress Developer Kit is free to qualified XTension developers.

Astrobyte LLC of Denver can be reached at (303) 534-6344 or (888) 278-7629; fax (303) 534-6557; info@astrobyte.com; http://www.astrobyte.com. □

PageMill

From Page 8

great tool," Toups said. "Being able to drag and drop tables will be a timesaver for me." Toups added that the spell-checking and multimedia features are a boon. "To have all that in one package is something I've really been shooting for."

Chris Stevens, marketing manager at the Boston-based Aberdeen Group, said Version 2.0 "has a lot of the features people are striving for. It's a solid product that is well-positioned for both the intranet and Internet."

The new version of PageMill will also mark the product's entry into the Windows market; Adobe said it will ship versions for Windows 95 and Windows NT simultaneously with Version 2.0 for Macintosh.

Upgrade pricing from Version 1.0 was not available.

Adobe Systems Inc. of Mountain View, Calif., can be reached at (415) 961-4400 or (800) 833-6687; fax (415) 961-3769; http://www.adobe.com. □

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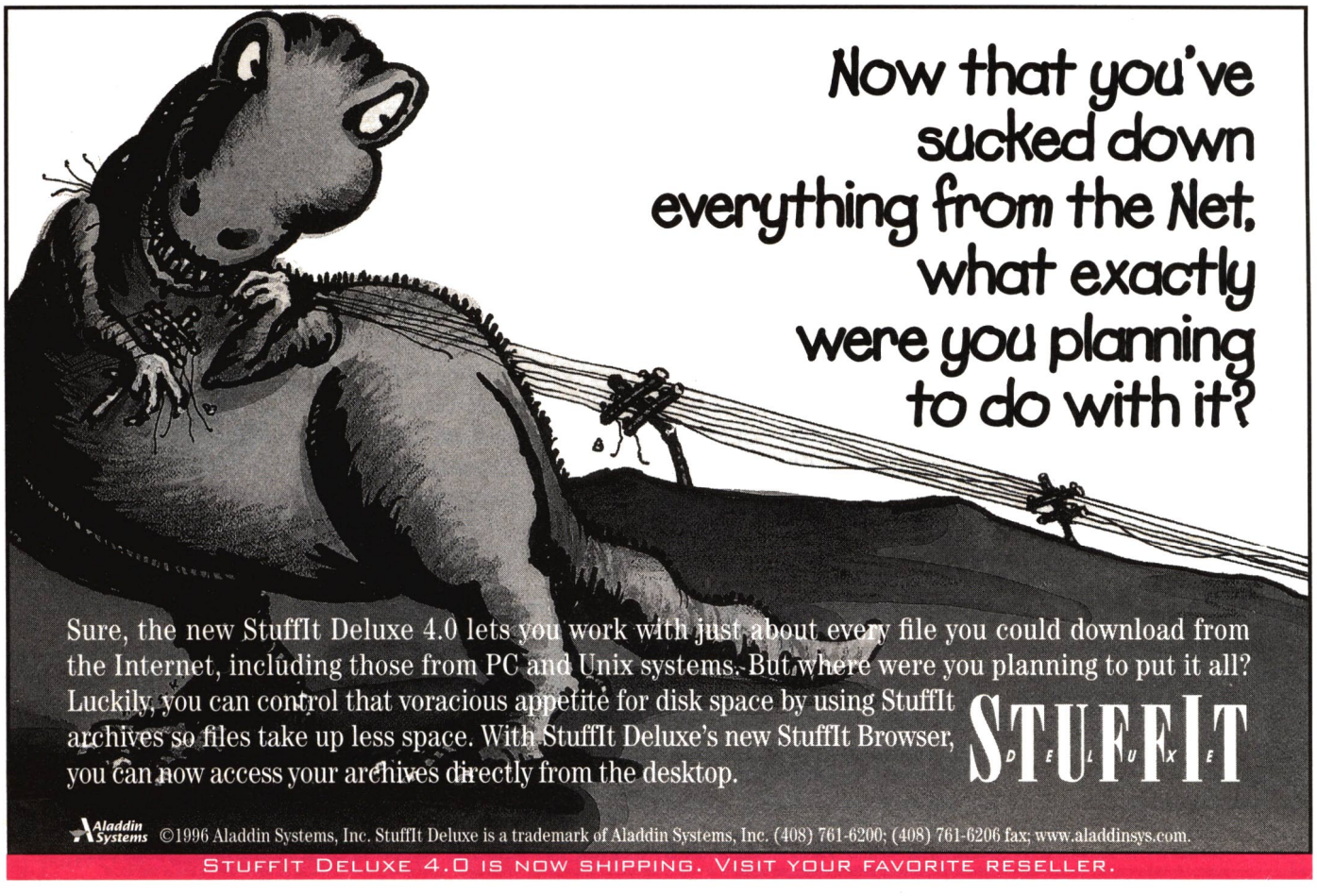
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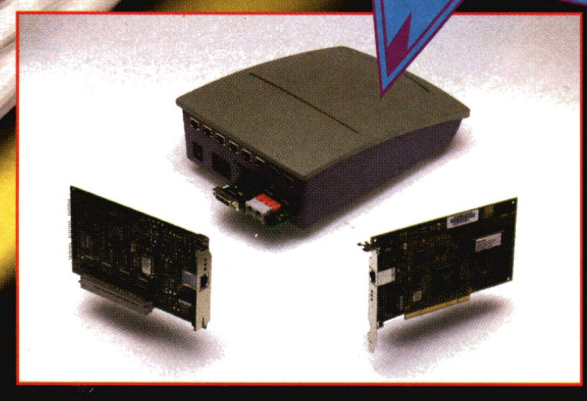

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Mac OS

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Byte magazine was similarly impressed with the PT810. Their reviewer, Jerry Pournelle said, "You'll have to fight me to get this monitor away from me. I am literally sitting here wondering how I got along without it all these years. I can read it comfortably from any position … Highly recommended."

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SURF'S UP

The final version of Microsoft Corp.'s Internet Explorer for Mac is now available from http://www.microsoft.com.

ISDN PC Card ships for Macs

Eicon's Type II card does 64 Kbps

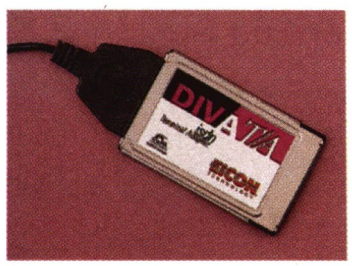
By Joanna Pearlstein

Eicon Technology Inc. will break the speed barrier for mobile communicators in May with the shipment of the first ISDN PC Card for the Mac.

The $495 Diva Terminal Adapter, a Type II PC Card that fits into PowerBooks equipped with PC Card slots, is a dual-channel ISDN, or Integrated Services Digital Network, terminal adapter that transmits data at speeds up to 64 Kbps — more than twice as fast as a 28.8-Kbps PC Card modem.

Support for aggregated 128-Kbps speeds and MultiLink PPP (Point-to-Point Protocol) will be provided via a free flash memory upgrade due in August, the company said.

The Diva, which is Eicon's first Mac product, supports the Hayes AT-command set and requires no software drivers. It is available with either an S/T interface or a U interface; the latter includes an integrated NT1.



Eicon Technology's Diva is the first ISDN PC Card for the Mac.

Eicon said PowerBooks see the Diva as another serial port, however, the credit card-size terminal adapter is not limited to Mac serial port speeds.

Eicon Technology Inc. of Dallas can be reached at (214) 239-3270 or (800) 803-4266; fax (214) 239-3304; sales@eicon.com; http://www.eicon.com. □

Apple makes developers a top priority

By Clifford Colby and James Staten

Apple plans to give a higher priority to its Developer Relations Group, and division Vice President Heidi Roizen is poised to take action.

The company last week announced that the Developer Relations Group will now report directly to Chief Administrative Officer George Scalise and has been organized into five units: evangelism, developer marketing, developer technology services, developer business develop-

See Developers, Page 16

InterServer update takes on WebStar

By James Staten

InterCon Systems Corp. is hoping to garner a bigger piece of the Macintosh Internet server pie with the latest version of its InterServer Publisher. Version 1.2, which shipped last week, delivers a raft of features not yet available from rival Quarterdeck Corp.'s WebStar.

InterServer Publisher is an integrated Web, FTP and Gopher server with a built-in image-map processor and support for most Mac CGIs (Common Gateway Interfaces).

Version 1.2 is Open Transport-native and caches files, which InterCon said improves performance significantly.

"It seems to be faster than WebStar and as fast as [Maxum Development Corp.'s] Rush Hour," said Kurt Anderson, president of Honeycomb World Wide Web Publishing Inc. of Eden Prairie, Minn.

Other new features include support for aliases, which let administrators serve documents stored in other directories or volumes. Subadministrator rights to folders in the InterServer hierarchy let users other than the Webmaster maintain sections of a site via FTP with-

See InterCon, Page 16

Fast Ethernet boxes race in

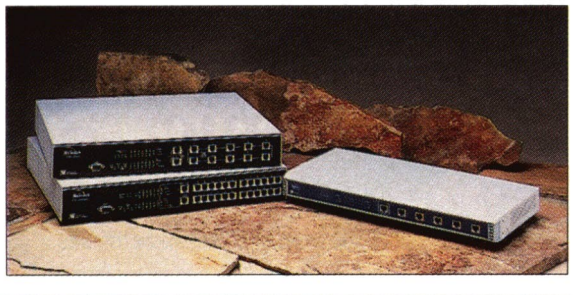
By Clifford Colby

Network Peripherals Inc. is celebrating the spring thaw with its announcement of a flood of Fast Ethernet devices due by summer.

Among its offerings will be the NuSwitch family of 100BASE T switches. The $8,995 FE-1200 will come with 12 switched Fast Ethernet ports; the $3,995 FE-600 will have six Fast Ethernet ports. The company also said it plans to offer two-port bridges, the $995 FE-200TT and $1,195 FE200TF, for linking Fast Ethernet copper-to-copper or copper-to-fiber segments, respectively.

NPI is also working on a set of dual-speed 10/100BASE T NuSwitch devices. The switches will be available with a variety of 10- and 100-Mbps Ethernet port combinations and will be priced between $695 and $5,995. The company will also offer a stand-alone 100BASE T FE-5108 hub with eight ports for $1,195.

Network Peripherals Inc. of Milpitas, Calif., can be reached at (408) 321-7300 or (800) 674-8855; fax (408) 321-9218; http://www.npix.com.



NuSwitch dual-speed devices will come with various 10- and 100-Mbps Ethernet ports.

Hayes emerges from Chapter 11

Company retains its independence

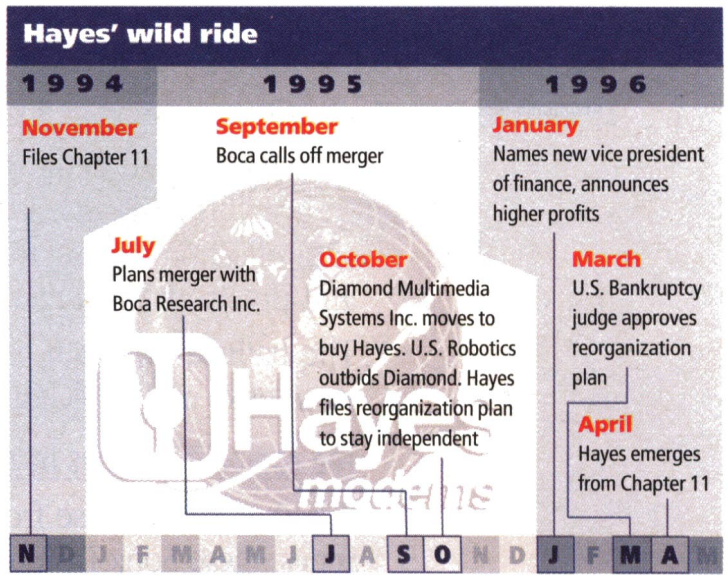
By Joanna Pearlstein

Beleaguered modem pioneer Hayes Microcomputer Products Inc. emerged from Chapter 11 bankruptcy last week and plans an initial public offering later this year.

Norcross, Ga.-based Hayes filed for protection from creditors under Chapter 11 in November 1994 after product misforecasts and component shortages resulted in a red-ink-laden balance sheet. Hayes spent much of last year discussing and fending off takeover attempts by Boca Research Inc. of Boca Raton, Fla.; Diamond Multimedia Systems Inc. of San Jose, Calif.; and U.S. Robotics Corp. of Skokie, Ill.

Last October, the company filed a recovery plan that would allow it to remain independent; the U.S. Bankruptcy Court approved the plan in March. This month Hayes announced it obtained funding to finance the reorganization plan. Last week it said it had paid off its creditors in full, with interest.

During its period of financial uncertainty, Hayes continued to ship new products for Macs and Intel-standard PCs. In February, the company released the Optima 288 Business Modem for the Mac, and Hayes said it plans to release new modem, ISDN (Integrated Services Digital Network) and cellular products this year.


Hayes' wild ride
1994
1995
1996
November
Files Chapter 11
September
Boca calls off merger
January
Names new vice president of finance, announces higher profits
July
Plans merger with Boca Research Inc.
October
Diamond Multimedia Systems Inc. moves to buy Hayes. U.S. Robotics outbids Diamond. Hayes files reorganization plan to stay independent
March
U.S. Bankruptcy judge approves reorganization plan
April
Hayes emerges from Chapter 11
N D J F M A M J J A S O N D J F M A M

"Despite all their problems, they still have the name recognition and mind share they've traditionally cultivated," said Curtis Price, analyst at International Data Corp. of Framingham, Mass. "That's really going to help them going forward. They're trying to let people know they're reinventing themselves."

Funding for the Hayes reorganization plan was provided by ACMA Ltd. and Rinzai Ltd. of Singapore, and Kaifa Technology Holdings Ltd. and Rolling Profits Holdings Ltd. of Hong Kong. Northern Telecom Inc. of Toronto, which earlier expressed interest in providing funding, withdrew its offer in March.

Joe Formichelli, vice president of worldwide manufacturing at IBM Corp., will become Hayes president and CEO on May 1, according to sources. Dennis Hayes will remain chairman. □

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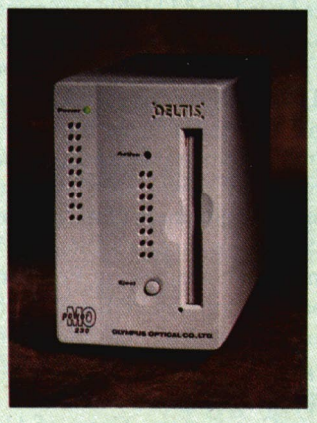

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Developers

From Page 14

ment and international developer relations.

Roizen and Jonathan Fader, manager of developer marketing, said developers will see the fruits of this new commitment in the coming months, beginning with the Apple Worldwide Developers Conference in San Jose, Calif., in May.

Roizen said the speed with which Apple elevated and reorganized its developer efforts reflects the company's sense of urgency.

"We don't have four months to think about it, four more months to write proposals and two more months to make the slides look nice. Forget it," she said.

Roizen said she is moving briskly to address what she calls the calcification of the channel. "You talk to a computer store buyer and they say, 'I'll take two of your Mac titles and 10 of your Windows titles,'" she said. "You take your hybrid CD ... they stock it in a section called Windows software. How does a Mac buyer know it's there? We have to see what we can do about it. I believe our opportunity is this Christmas selling season."

Roizen vowed to get developers involved in this effort. "They're the ones living in the channel every day; they know where the bodies are buried," she said.

Roizen said she is also examining how Apple approaches its third-party developers. "When I came here, I was surprised that developer marketing meant marketing to developers, not marketing for developers," she said.

Roizen, however, has more in mind than marketing. She said she is exploring ways that Apple can help its developers raise money, and she plans to create a high-level position that will assist developers with their capital needs.

And Roizen's plans extend beyond the United States. "It's very easy to focus on the U.S. crisis and forget that half of our sales and half of our developers are outside the U.S.," she said.

Fader said WWDC will reflect the company's new-found attention to developers' needs. Apple said it expects 4,000 people to attend this year's conference, up from last year's 3,500. The company said it plans to repeat sessions more often, devote more time to hands-on activities and use WWDC to highlight Copland.

"Our goal is to make [Developer Release 1 of Copland] available at the conference," Fader said. □

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InterCon

From Page 14

out having full access to the server.

Version 1.2 supports HTTP Keep Alive and server-push functions, which deliver multiple images and documents through a single connection, as well as HTTP Cookie, a function that stores information such as user names, passwords or shopping lists on the client (see 03.18.96, Page 18).

The program now performs preprocessing to pass specific file types directly to a CGI, and CGIs can be left running when not in use. The FTP server now lets administrators disable anonymous access or enable universal read-only access.

According to a survey conducted earlier this month by Netcraft Ltd. of Bath, England, Quarterdeck's WebStar and its shareware sibling, MacHTTP, account for about 98 percent of the Mac Web server market.

InterCon said it hopes the new version of its software will increase InterServer Publisher's market share from its current 0.2 percent. The company cited features in Version 1.2 that will not be present in WebStar until May or June, such as data caching, support for HTTP Keep Alive, built-in log management and preprocessing.

"With Version 1.2 they have all the features I need, and I highly recommend it to anyone who asks," said Victor Spadaro, vice president of marketing and operations at JDV Enterprises Inc. of Clinton, Iowa.

InterServer Publisher is priced at $495; upgrades from previous versions are $99.

In related news, InterCon said it has stopped development of its Internet client, NetShark, in favor of Internet Valet, a client suite it acquired in February when its parent company Performance Systems International Inc. of Herndon, Va., merged InterCon with Software Ventures Corp. of Berkeley, Calif.

InterCon Systems Corp. of Herndon, Va., is at (703) 709-5500 or (800) 468-7266; fax (703) 709-3360; sales@intercon.com; http://www.intercon.com. □

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"We are using FirstClass at the Prime Minister's office. After that, other institutions have been inspired. In just a few months, thousands of FirstClass copies were spread over the country."
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BPA INTERNATIONAL

Broadcast signal

Last week's National Association of Broadcasters show was a rousing reminder of the Mac's vital role in multimedia, 3-D and digital video. What makes Apple's achievements in Las Vegas so special is that they come in the face of strong competitive pressures from workstation vendors and the usual Intel-standard PC suspects.

In the workstation market, Sun Microsystems Inc. and Silicon Graphics Inc. have pushed hard to make their Unix-based systems attractive to video-production studios and service bureaus. The raw horsepower they offer is tempered, however, by the poor usability of Unix and generally higher prices. Apple, with its high-powered PowerPC processors, wide range of applications and easy-to-use operating system, has a leg up on Sun and SGI for all but the highest end of the video market — and even there Apple competes well.

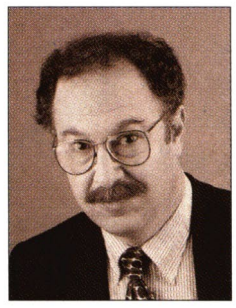
Wintel machines provide more challenges to the Mac, primarily because the two platforms compete directly in the same space. Pentium-based systems offer — at least on paper — comparable performance and slightly lower prices than Macs, while Microsoft Corp.'s OS enhancements bring Windows 95 closer to the usability of the Mac and Windows NT's reliability closer to that of Unix.

Apple can and does succeed against Intel-based PCs and Unix workstations in large part because of the tight integration of the hardware and software, and that's what the company showed off to great advantage last week at NAB. Despite the problems with PCI, system software updates and a less-than-ideal file system, the Mac is still the closest thing to plug-and-play available today.

The success is not solely because of Apple's hardware and OS, however. It requires a robust group of third-party vendors that are willing to make the Mac their platform of choice when they push the envelope. NAB presented a strong reminder of that vital role as well. □

THE SECOND DECADE HENRY NORR

The case for ISDN: Focus on what's here and now



Wherever I go, readers who remember my columns on ISDN ask me how my connection is going. Almost invariably, they tell me they would love to have faster, more reliable Internet access, and they've been thinking about making the move to ISDN.

But in about nine cases out of 10, the bottom line is that they haven't done it yet. Frankly, I'm amazed, because I think they are missing out on a technology that, for all its flaws, could make their on-line lives happier and more productive.

Excuses, excuses

Some of these users have good excuses: ISDN (Integrated Services Digital Network) simply isn't available where they live or work, or they really can't afford the necessary hardware, installation fees and monthly charges. But in the circles I travel — and, I suspect, for a majority of MacWEEK readers — those aren't usually the real problems. In most cases the explanation comes down to one or both of two other arguments: They're intimidated by what they've heard about ISDN configuration, or they're waiting for something faster.

On the first count, I and others who have written about ISDN need to accept some responsibility, because nearly every article on the subject, mine included, goes on at length about the technological mumbo jumbo too often necessary to get the service up and running.

The problem is not that these lurid tales aren't true but that they may have obscured the other side of the story: how simple, reliable and convenient ISDN usually is once it is properly configured. And those benefits continue indefinitely, while the initial hassles are soon only distant memories.

Besides, if you're really scared to take on the setup challenge, Farallon Computing Inc. will now do it for you for just $99.

On the horizon

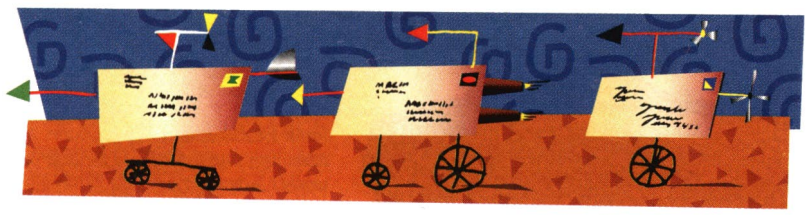
As for the allure of alternatives, I, too, am excited when I read about cable modems, ADSL (Asymmetric Digital Subscriber Line) and other emerging technologies that promise huge leaps in bandwidth. But field testing of these schemes has only just begun, and in most places they won't be available for at least several more years.

Granted, an ISDN line won't shield you from the awful truth about this year's Internet: It's getting slower and slower. But none of the alternatives shields you either because the main problems have nothing to do with the width of your local pipe; the real issues are backbone bottlenecks, overcrowded servers and insensitive page design. (If I were paying for development of a site aimed at the general public, I'd require the designers to do at least half their testing over 14.4-Kbps modems.)

ISDN, in short, is a relatively affordable way to get about as much throughput as the Internet can deliver today.

And no one is asking for a lifelong commitment — when superior alternatives are actually at hand, you can always switch. Most of us move up to a faster Mac at least every few years. It's the same approach you should have when it comes to wide-area networking. □

Henry Norr, editor emeritus of MacWEEK, welcomes feedback in the MacWEEK forums on CompuServe or at henry_norr@macweek.com.



LETTERS

Jazzed about Iomega

Great article, Carolyn (04.08.96, Page 3). I remember Macworld Expo 1995 when Iomega Corp. introduced the Zip drive to great fanfare. I thought, "Somebody finally got it right." I picked up one and have been quite the happy camper ever since.

Now, I can recall three years ago when SyQuest threatened to install firmware that would chew up any "clone" cartridges. To me, that was unconscionable. And I thought back to that time when I placed my order for a Zip and relished it all the more. I still keep a 44-Mbyte SyQuest drive around for the occasional Kinko's run, but that's it.

By copying Iomega, SyQuest proves it just doesn't get it. If it did some consumer research of its own, perhaps it could make the next storage breakthrough. But instead, I imagine they'll hope some of the Bill Gates magic rubs off on them and that the imitators will reap the rewards from the innovators.

Craig Koller, multimedia analyst
CCH Inc., Torrance, Calif.

Is DayStar doomed?

Well of course DayStar Digital Inc. is going to bite it (04.08.96, Page 4). I can buy two Micron Technology SMP servers with 21-inch screens, twice the memory and twice the disk storage for the same price as one DayStar Genesis MP 600 without a monitor.

I've been committed to the Mac since my ads took Oracle Corp. from $15 million in sales to $1 billion, but with incompetent greedheads like DayStar on the ropes, I may have to make that pimple-faced billionaire from Redmond, Wash., some more money and go to Windows NT.

And I'm damned unhappy about it, too, because I'd send DayStar a check for $10,000 tomorrow for its Genesis MP 600 but not the $17,400 it's asking. And rumor is that Apple is thinking about raising its prices. ... Oh golly, Miss Molly!

Adobe Photoshop and QuarkXPress have spawned a whole industry, and the Apple architecture is just a commodity now. Face it, Apple/DayStar: You can't get premium prices now or ever again. Too bad Oracle CEO Larry Ellison didn't buy Apple and show Apple/DayStar bean counters how to fight a war instead of snatching defeat from the jaws of sure victory.

Rick Bennett, president
Rick Bennett Advertising, Sandy, Utah

Make quality Job 1

It's good to see Apple rethinking its recent sacrifice of performance and quality for the sake of market share (04.08.96, Page 1). To my mind, one of Apple's strengths, until 1994, was its indestructible and integrated hardware and OS. Since that time, to gain market share, there has been a degradation of key I/O systems on the Mac. We've seen floppy drives degrade in performance to increase margins (starting with the Quadra 840AV I've got on my desk), a move to non-Trinitron Apple monitors (which gives the Mac the look, if not the feel, of Windows), and slower hard disk access (the stock Power Mac hard disks don't compare to my Quadra 700 at home, which sports a 430-Mbyte, third-party Quantum drive). Waiting for a Power Mac to start up is, well, like waiting for Microsoft Windows 95 to boot. All that power in the CPU, wasted because of mediocre I/O. From the user standpoint, it's the response and output of a system, not the underlying hardware, that makes the impression. At work, we'd gladly pay the premium for the better hardware of yesteryear. For me, I'll keep my 700 until Apple Senior Vice President Frederick Forsyth's steps for reliability turn this situation around. Hopefully, Apple will again look toward pleasing customers first, shareholders second.

John T. Robinson, corporate secretary
Sara Inc., Huntington Beach, Calif.

Got them download blues

Don Crabb's column was right on (04.01.96, Page 22). Download logjams are a major problem on the Internet.

As I'm writing this, I'm trying for the second time today to download Atlas from Netscape Navigator 2.0. What I find most frustrating is spending more than an hour of download time just to have the connection shut down. When that happens, StuffIt still tries to unstuff the file, which results in a broken application that appears to be OK. At least it looks good until I try to use it.

In my current download effort, I'm averaging just 834 bytes per second, and I'm connected to the Internet through a T1 line.

I fully agree with Crabb that if Apple wanted to really do something to improve the Internet, it should find a better way to transfer software. I must have been one of the lucky ones with the Mac OS 7.5.3 update. I went in through my America Online account and downloaded all disk images in a little less then two hours.

Chet Rindfuss, systems architect
The Boeing Co., Seattle

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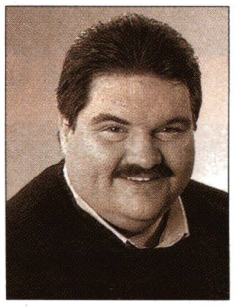
THE MAC MANAGER DON CRABB

As CEO's 100th day nears, a report on Apple's progress

During the past 10 days I've spoken at two Mac user groups in the Chicago area to discuss the hot topic of the day: Had Apple finally gotten it, or would 1996 simply prove to be another bailing-wire-and-spit job that fixed the company enough to limp through to a meager profit by year-end?

As I'm writing this, it's Day 71 of the first 100 days of Apple Chairman and CEO Gilbert Amelio's administration. That number will be an important benchmark to the analysts; the general press; and Apple customers suffering from years of neglect, poor service, broken promises and outright abuse.



So, you can bet that, if by Day 100 of Amelio's reign the company has not articulated a strong vision of its future, along with the management structures, marketing efforts and technological plans to make it happen, the company will be nailed to the wall. Apple, quite frankly, has used up all of its excuses.

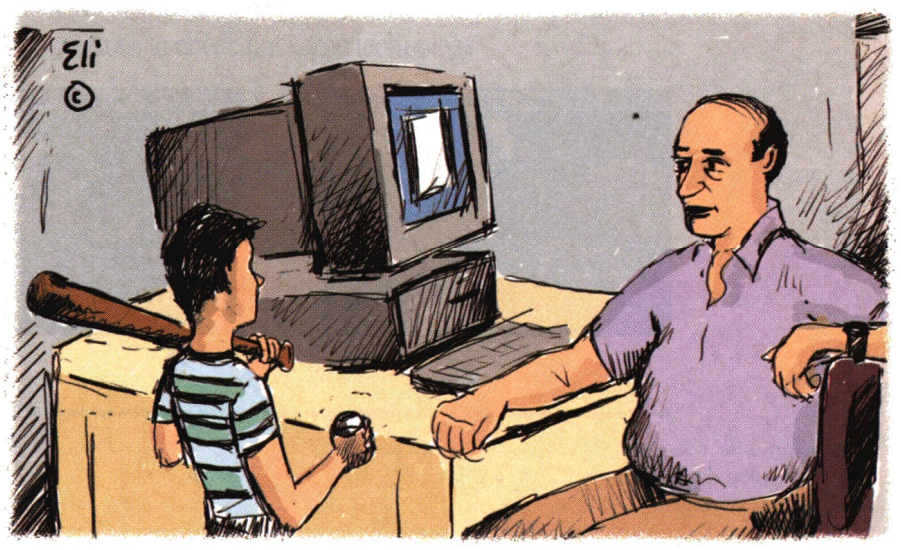
So, how does the new administration look at Day 71? A report card seems in order.

- **Administrative functions: B.** Apple has done a decent job of cutting administrative, managerial and overhead costs, but more managers who aren't with the program have to go. The company also has to get better at redefining what its employees do and don't do — not everyone can be a manager.
- **Production: Incomplete.** Apple is cutting plants that are not cost-effective, but it must mount a serious effort to find lower-cost suppliers and third-party assemblers to give it flexible, quick manufacturing. Once upon a time, the old Apple Fremont (Calif.) factory was state-of-the-art; it's not anymore. Apple needs to get its manufacturing in line with today's new modular and flexible production state of the art.
- **Top management: A-.** The company has done well with first-rate hires in Heidi Roizen, George Scalise and others. It has also made solid moves to retain and re-empower Jim Buckley and Sajit Chahil. Apple still needs to take a hard look at some other top execs, though. Some must go. (By the time you read this, David Nagel will be one of them.)
- **Delivery of technologies, products and solutions: C.** The promise of OpenDoc is wearing thin. We need to see real containers and parts. Problems with System 7.5.2, 7.5.3, Open Transport and so forth still plague customers. Intermittent hardware problems on PCI Macs still need to be uniformly addressed. We also need the new PowerBooks — now.

Also, the ship date of Copland and Apple's disclosures on what Copland will be and do is problematic since customers are still not involved. And, when will Apple deliver a real Internet strategy that will knock our socks off? The new leadership at Apple's R&D group has to make all this happen soon.

- **Developer relations: A.** With Roizen and Guy Kawasaki things are really looking up for developers. As a result, next month's Worldwide Developers Conference promises to be a winner. It was also a brilliant move to make the developer relations group report to Scalise.
- **Marketing: F.** Where's the killer ad campaign? Where are the big events to show us that Apple really gets it? Apple has blown it here. □

Don Crabb welcomes comments at his Internet address decc@cs.uchicago.edu. You can also check out his home page at http://cs-www.uchicago.edu/~decc/.



"Jimmy, someday you'll understand; the Internet is a jealous mistress."

Comments? Ideas? Contact Eli at elitoons@aol.com

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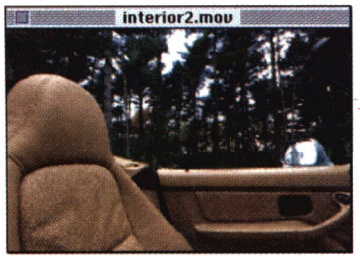

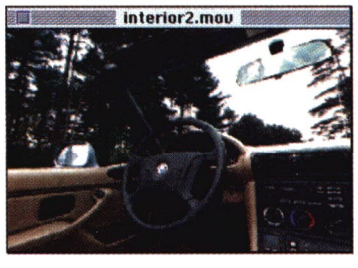

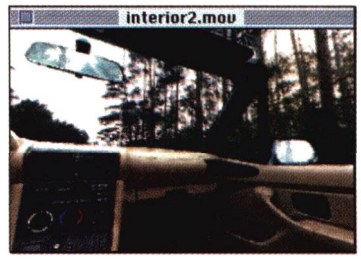

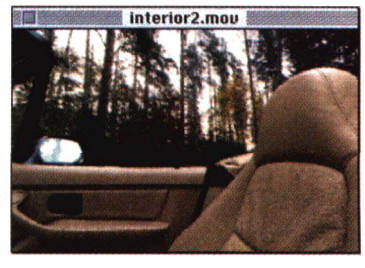

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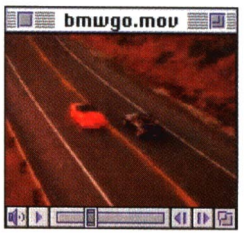
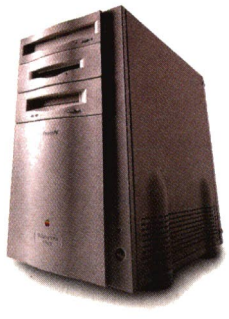


QuickTime movies. Digital videos so realistic that the only thing missing from taking the Z3 roadster for a test-drive is the wind in your hair.



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Computer Telephony 1-9-9-4 PRODUCT OF THE YEAR

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EDITOR ON DECK

An audio file featuring our senior reviews editor is at http://www.zdnet.com/macweek/mw_1016/rev_deck.html.

Macromedia Director 5.0 stays true to its tools

By Ben Long

The release of Director 5.0 comes at a crucial time in the product's history. Long the leader of multimedia authoring programs, Macromedia Inc.'s flagship product is facing its most difficult rival, mFactory Inc.'s $4,995 mTropolis 1.0, which shipped earlier this year.

New features add value, but at a basic level, Director 5 is very similar to predecessors.

To combat mFactory's advance (see 03.04.96, Page 29), Macromedia has added several commendable features, including improved text support, multiple casts and enhanced Lingo scripting tools. The company is also using this upgrade to add its new, cross-product interface to the $850 (estimated street price) Director, as well as introduce its standard plug-in architecture.

Nevertheless, at Version 5, Director's design is showing its age.

Director 4.0 (see 05.02.94, Page 51) had already added Macromedia's Windows-like, 3-D feel to the interface. Version 5 adds a tool bar that cannot be customized and extends across the top of the screen. Aside from these cosmetic changes, the interface and operation remain the same.

Thousands of casts

You construct presentations by importing elements into a Cast, then placing cast members on a Stage. You control the cast members' motion, properties and interactivity through the Score, a spreadsheetlike window where you can assign simple commands or complex scripts to any character or moment in time.

With Director 5, any presentation can have multiple casts. A New Cast command lets you specify a name for the cast and whether it should be stored internally (as part of the movie) or as an external file.

Different scenes or sections of a presentation can have entirely separate casts. In addition, with external casts, a movie's content becomes separate from its structure. Consequently, any number of users can be working on the cast file while others develop the movie's Score and structure. External casts are also reusable and can be shared between different movies.

Multiple casts also let you easily make sweeping changes in a movie simply by swapping from one cast to another. Say you're creating a game in which the user can don a pair of night-vision goggles. With multiple casts, you can create a cast of characters that look normal, then duplicate the cast and edit each member to look as though it is being viewed through the goggles. When users activate the goggles, a simple Lingo command switches to the goggled cast, immediately rendering the entire scene in "night vision." Because Director references cast members by their location within the cast, each member would be seamlessly switched with its night-vision counterpart.

The Text window in Macromedia Director 5 features full character formatting, tabs and indents. Unfortunately, the program still has no automatic hypertext controls.

Mightier than the sword

Despite video, sound and animation features, text is still the main source of infor-

See Director, next page

score card

Director 5.0

Macromedia Inc.
Estimated street price: $850*
Overall value ◆◆◆◆

With its fifth version, Macromedia has added many evolutionary features to its flagship multimedia authoring tool. Presenters will particularly appreciate anti-aliased text and the capability to import RTF text, although there is still no easy way to create hypertext links. Veteran users will be excited about multiple casts; a new plug-in architecture; and Lingo additions, including script-based Score generation and a full-blown debugger. But at a fundamental level, Director 5 is very similar to its predecessors. If its time- and cell-based metaphor bothered you before, this version will provide little relief.

Performance ◆◆◆◆
Features ◆◆◆◆
Ease of use ◆◆◆
Documentation/support ◆◆◆

**Upgrades from previous versions, $399. Upgrades from any version of Director to Director Multimedia Studio, $499.*

Key ◆◆◆◆◆ *Excellent* ◆◆◆◆ *Very good* ◆◆◆ *Good* ◆◆ *Fair* ◆ *Unsatisfactory*

miroMotion DC20 card is a breakthrough in video

By Dale Coleman

For Macintosh digital video, the miroMotion DC20 PCI board is a breakthrough product. For a mere $999, this board from miro Computer Products Inc. delivers full-motion, full-screen (640-by-480-pixel) S-video-quality video for PCI-based Power Macs. The card boasts real-time capture at up to 30 frames (60 fields) per second; user-selectable, on-the-fly Motion-JPEG compression; and a solid video-editing solution through the bundled Adobe Premiere LE 4.0.

PCI board from miro brings full-motion video to the big screen at a matinee price.

Several factors account for miroMotion's low price. First, using PCI hardware brings the cost down over more expensive NuBus components. Also, the board has no audio support but instead relies on Premiere to integrate video with the audio generated by the Mac's mediocre built-in sound capabilities. Finally, the S-video-quality output the card produces may be great for corporate videos but falls short of broadcast standards available in more expensive solutions. If the latter two issues aren't a major concern, however, the miroMotion DC20 is a bargain. .

Setting the stage

miro recommends a Power Mac with 16 Mbytes of RAM and a fast, AV-compatible drive. We found 32 Mbytes of RAM a more comfortable configuration; as is always the case with Adobe Premiere, overall responsiveness improves with additional RAM. A dedicated drive for video

See miroMotion, Page 25

Director

From previous page

mation in a multimedia presentation. To better serve authors who use Director as a straight presentation product, Macromedia has greatly improved Director's text capabilities.

The new Text window lets you create Text Field cast members. Looking and acting like a full-blown word processor, the Text window provides full typeface control as well as tabs, indents and justification.

Most exciting, however, is that text is now anti-aliased on the fly as a movie plays. Whereas in previous versions anti-aliasing against one background rendered the text useless in front of other backgrounds, on-the-fly anti-aliasing in Version 5 looks great against any background, even animated ones. Amazingly, there's no performance degradation when using anti-aliased text.

> The most exciting new text feature is that text is now anti-aliased on the fly as a movie plays; it looks great even against an animated background.

Director 5 also brings support for RTF text. The program preserves RTF formatting and interprets page or column breaks as new cast members. This lets you prepare a presentation in a word processor, save it as an RTF file and then import it into Director. To finish the presentation you just drag the elements onto the Stage and script their interactivity. Like text fields, RTF text features on-the-fly anti-aliasing.

Both RTF and normal text fields can be edited during development. However, when you save your presentation as a stand-alone Projector file, RTF text is rasterized into bit maps and cannot be edited. Text fields, however, can still be edited, allowing for user input and other forms of interactivity.

Unfortunately, there's still no automatic facility for creating hypertext links. You cannot specify a single word or words as a button, nor script a link to a new location. Even Lingo programming doesn't ease creating a hypertext system because Lingo has no function for determining the last word that was clicked on. Instead, you're still confined to using bit-mapped text as buttons to simulate hypertext.

Media creation

Because it began as a dedicated animation program, Director has always had good built-in media-creation tools. Some new features make painting in Director even easier. Onionskin lets you view ghosted representations of previous or following cast members, giving you a reference for painting new cast members.

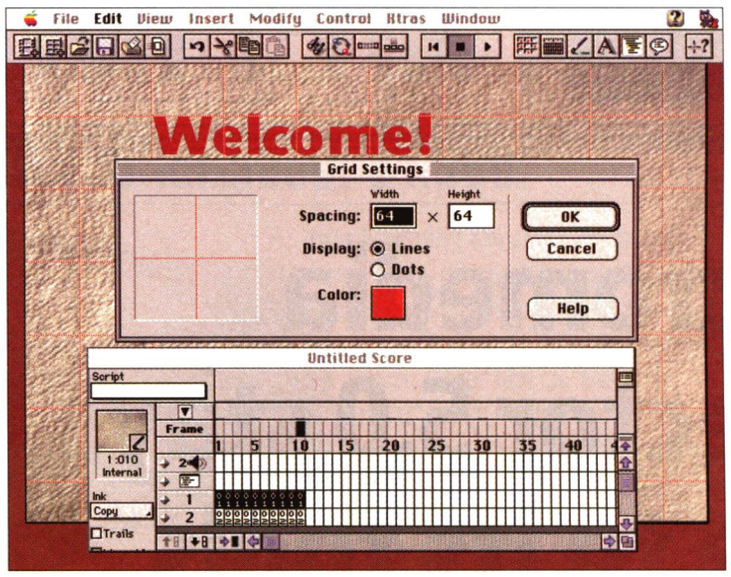
When placing cast members on the Stage, you can now use grids with snaps and alignment tools for precise positioning. Unfortunately, these tools are not available in the Paint window.

Director now supports Adobe Photoshop filters through its new Xtras API. Filters can be applied to a single cast member or used to create ranges of new cast members. Dynamic filters can have beginning and ending settings specified; Director will tween. Resulting cast members will be automatically inserted into the cast, allowing you to create animated filter effects.

Despite these tools, however, Director's media-creation features are still underpowered. Some simple additions such as anti-aliased brushes would make the tools more usable. However, for both painting and animation there are better tools available. Fractal Design Corp.'s Painter 4.0 offers onionskinning and frame-by-frame painting of QuickTime movies, and Adobe After Effects 3.0 offers sophisticated animation features, such as motion blur and multiple-layer compositing.

Bilingual

Lingo, Director's built-in scripting language, is greatly improved over Version 4. It now includes a full-blown debugger and a Watch window that let you easily view variables, set breakpoints, and step through code either a line or structure at a time, which eases troubleshooting.



Director 5 now provides snap-to grids, making it easier to position sprites and eliminate "jumping." New alignment tools help you more easily align sprites on the Stage.

Macromedia has also added about 100 new Lingo commands and functions, including ones related to new application features, such as managing multiple casts and controlling text properties.

The most powerful new addition, though, is the capability to create the Score data through Lingo scripting. New Lingo commands let you create and edit cast members and frames, allowing you to generate whole movies through Lingo code. This feature allows a Director movie to produce new animation on the fly based on data provided by the user, freeing you from pre-scripting animations for every possible user action.

Read all about it

Director previously used XObjects and XFunctions, small bits of code written in C, Pascal or Assembly, to add functions to its existing tool set. The new Xtras technology has a lot more to offer than its predecessors, letting third-party developers create more full-featured additions to Director and seamlessly insert them into the interface. Director ships with several sample Xtras, and Xtras for QuickDraw 3D and QuickTime VR support should soon be available on Macromedia's Web site. Other Xtras have been announced, including transitions from

See Director, next page

IN BRIEF

Deck II 2.5

Multitrack recording app gets nondestructive effects

Overall value ♦♦♦

Multimedia developers, digital video producers and musicians who need to create high-quality digital audio will find a useful set of tools in Macromedia Inc.'s Deck II. Version 2.5 offers 16-bit multitrack recording with more playback tracks; new editing features; and new signal processing options, including nondestructive real-time effects. With an estimated street price of $299, Deck II 2.5 is also fully PowerPC-native.

Playback power

Depending on the Mac's clock speed and throughput, Deck can play back between eight and 32 tracks without additional audio hardware on a Power Mac, up to six tracks on an AV Mac and up to four on a high-end PowerBook. (You can also run Deck on a Mac IIx or better with a sound card.) Although you must bounce down to submixes for actual playback, Deck II theoretically has the capacity to create up to 999 virtual playback tracks.

Pull-down menus in Deck control the audio proceedings, and redesigned windows open to create a complete multitrack recording, editing and mixing environment. Sound waveforms are displayed in the Tracks window, which also controls numerous recording and editing functions. The Mixer window looks like a mixing board with faders and signal processing controls, and the Transport window displays Record, Play, Fast Forward and Rewind buttons as well as Looping, Punch-in and Location Times.

While the Mac's two audio inputs allows for stereo recording, it limits Deck's overall multitrack recording capabilities because it can record on only two tracks at a time. This reduces Deck's usefulness as a live studio recording tool, where multitrack inputs are necessary to record separately microphoned drums and instruments. With an external audio interface, however, Deck will support up to four inputs.

According to Macromedia, a bug in the Power Mac's built-in sound hardware interferes with setting and monitoring input levels. Because of this, you cannot adjust the monitor volume or pan settings of record-enabled tracks, which makes it difficult to adjust headphone mixes during the overdub recording process. Therefore, to achieve high-quality sound recordings with Deck, you must use an external mixing board to send properly boosted signal into the record inputs when setting levels and to better control overall monitor volumes and pan settings. Fortunately, these complications are well-documented in the manual, which offers tips and work-arounds.

Several new features make editing in Version 2.5 fast and accurate. The redesigned Tracks window displays recorded sound on individual playback tracks as waveform regions. You can selectively cut, paste and copy regions within a track and between tracks, or you can use Range mode to select pieces of regions to cut, paste or copy.

You can assemble regions with a startling degree of accuracy with the new Time Axis, which runs along the top of the waveforms in the Tracks window. A pop-up menu lets you select the time units — Sample, Second, SMPTE or Beats — by which to perform your edits. Another pop-up lets you choose the resolution of the time unit.

These extremely fine resolution options not only dramatically enhance Deck II's editing accuracy but also let you precisely synchronize multitrack audio to QuickTime movies.

Signal to signal

Deck II now offers expanded signal processing features, including eight nondestructive, real-time effects: Gain, Parametric EQ, 7-band Graphic EQ, Lo-Shelf and Hi-Shelf EQ, two delays, and Chorus. Unlike destructive effects, these effects let you route and monitor signal as it plays in real-time through a chosen effect without altering the raw sound file. Deck II also supports Adobe Premiere-compatible plug-in effects as well as a small but useful group of on-board destructive effects, including Normalize, Reverse, Invert and Duplicate.

With Deck II's increased number of playback tracks, mixdown complexity increases as well. Automated mixdown features record all volume and panning changes to help simplify the process and decrease redundant tasks. This way you

See Deck II, next page

Director

From previous page

Xaos Tools Inc. as well as a palette reducer and optimizer from LizardTech Inc.

With Xtras, third-party developers can expand Director in any direction imaginable. Almost any element, including cast member types, transitions or Lingo extensions, can be created using the provided Xtras Developer Kit. As was the case with XObjects, however, Xtra development is not for the faint of heart; you'll need to know C.

Macromedia said it plans to release this week a Director 5-compatible version of Shockwave, its free technology for compressing and playing back Director presentations on the Web. In the meantime, Web developers must continue to use Director 4.

Conclusions

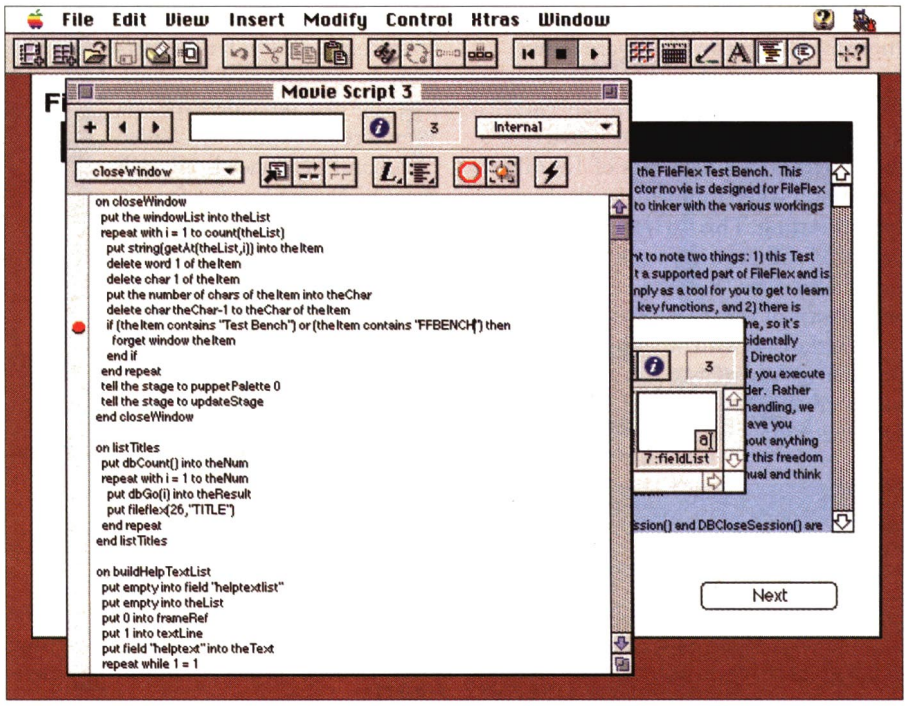
Director 5 remains a solid tool for multimedia development, and its new features will be valuable to most of the program's broad user base. Presentation developers will be pleased with the new text features, while serious Lingo programmers will be thrilled to have a debugger.

Despite the improvements, it's still easy to complain about Director's time-based paradigm. In addition to making it somewhat cumbersome to organize your movie, Director's Score-based approach causes other headaches. Characters and scripts are harder to reuse, and it can be difficult to understand a logical flow through the system. Director has always had this problem, but now there are options to Director.

Also, Lingo is a double-edged sword: While it's an incredibly powerful scriptor, it's required for even simple interactivity. We'd like to see some controls providing Lingo-like operability without scripting.

Still, Director's new features make upgrades well worth the fee, while the program's robustness and third-party support mean it's still a powerful choice for multimedia development.

Macromedia Inc. of San Francisco can be reached at (415) 252-2000 or (800) 326-2128; fax (415) 626-0554; http://www.macromedia.com. □


File Edit View Insert Modify Control Xtras Window
Movie Script 3
closeWindow
on closeWindow
put the windowList into theList
repeat with i = 1 to count(theList)
put string(getAt(theList,i)) into theItem
delete word 1 of theItem
delete char 1 of theItem
put the number of chars of theItem into theChar
delete char theChar-1 to theChar of theItem
if (theItem contains "Test Bench") or (theItem contains "FFBENCH") then
forget window theItem
end if
end repeat
tell the stage to puppetPalette 0
tell the stage to updateStage
end closeWindow
on listTitles
put dbCount() into theNum
repeat with i = 1 to theNum
put dbGo(i) into theResult
put fileflex(26,"TITLE")
end repeat
end listTitles
on buildHelpTextList
put empty into field "helptextlist"
put empty into theList
put 0 into frameRef
put 1 into textLine
put field "helptext" into theText
repeat while 1 = 1
Next

Director 5 now includes a full-fledged debugger and Watch window with breakpoints and step-throughs, making it easier for authors to troubleshoot their scripts.

Deck II

From previous page

can perform a mix in real time and automatically play it back before final mixdown. Although you can record fader moves with the mouse on-screen, you're limited to one control at a time, and slow visual redraws can impede the process. For this reason, recording mixdown automation with Deck II essentially requires an external MIDI controller.

Deck II's Visual Automation Envelopes let you mix down using a graphic display, where you can adjust volume and pan controls visually over the sound waveform. While this method can help fine-tune mixing moves, it's not as intuitive as real-time mixing. In addition, Deck provides a virtual mixdown function that lets you mix more than the maximum number of playback tracks by shuffling playlists onto Work tracks and mixing down play and Work track audio with all recorded automation.

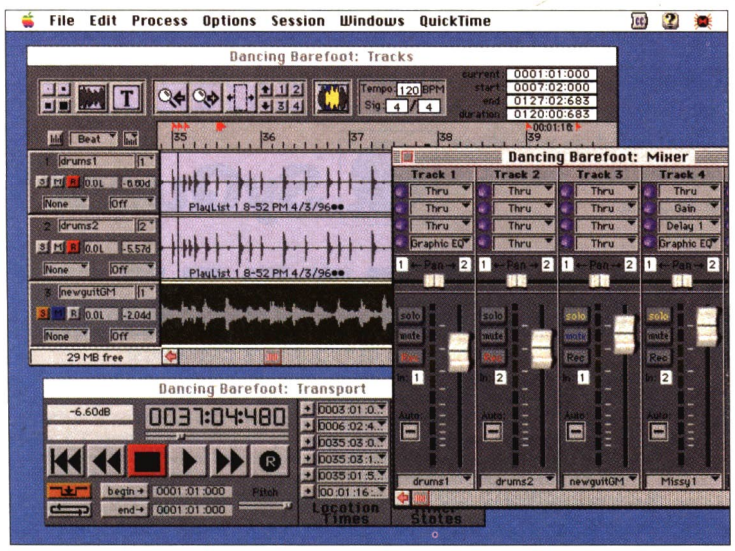
Deck can also handle the final mono or stereo mastering to disc of your mix. You can choose from a variety of audio file formats, a wide range of sample rates and bit-depth conversion schemes.

Close and play

We encountered several problems when using Deck II on a Power Mac 7200/90 with 80 Mbytes of RAM and a dedicated Fireball 1-Gbyte external hard drive. We occasionally received a Disk Too Slow error during recording and less frequently when playing back several tracks simultaneously. Following Macromedia's suggestions, such as increasing the RAM allotment and modifying the disk cache settings, did not clear up the problem.

Also, while Deck's nondestructive, real-time effects should let you add and fine-tune effects during playback, they often crashed our Mac, even when we applied them with playback stopped. Macromedia said some Power Mac CPUs have difficulty processing the signal coming though the 7-band Graphic EQ and confirmed that as more effects are added to the overall session, problems may increase. The company recommended trying playback using minimal nondestructive effects, playing fewer tracks or adding an audio card.

Other users we spoke with had little or no problems with their configurations. In general, for optimal performance we recommend you run Deck on a fast CPU and hard drive and use a moderate amount of tracks and nondestructive effects.



The Tracks, Mixer and Transport windows are at the heart of Macromedia's Deck II 2.5. More playback tracks, precision editing and nondestructive effects improve this multitrack recording program.

Conclusions

Deck II 2.5 is a versatile multitrack recording tool for multimedia musicians and soundtrack composers. Limited audio inputs do not make it the software of choice for recording live multitrack music in the studio. However, with some bug fumigation and a high-powered system, those creating live stereo or MIDI-sequencer-based recordings, digital video soundtracks and post-production audio should find few limitations.

Upgrades to Deck II 2.5 are $99. Upgrades from Version 2.2 are free if 2.2 was purchased after June 15, 1995.

Macromedia Inc. of San Francisco can be reached at (415) 252-2000 or (800) 989-3762; fax (415) 626-0554; http://www.macromedia.com. — *By Steven Roback*

miroMotion

From Page 23

capture is also recommended. In our tests, the Power Mac 7500's internal 1-Gbyte Quantum drive successfully captured video without dropping frames. If the hard disk chosen for data capture is too slow for the specified data-transfer rate, however, you will experience dropped frames.

The card has three connectors: one each for S-video input and output plus a single dual-purpose composite video-in and video-out port that requires the special Y cable included in the package. Simply install the card and you're ready to connect to any video source, including VCRs, camcorders, laser discs and video monitors. The DC20 accepts input in NTSC, PAL (European) and SECAM (French) video formats and outputs in NTSC or PAL format.

The DC20 software includes extensions that enable the system to recognize the new compression and video input source. These new resources are available to other QuickTime video applications as well as Premiere LE. In our tests the DC20 worked well with VideoFusion Inc.'s Fusion Recorder and Apple's Movie Player.

> Although video on the Mac display is choppy, motion on an external video monitor is displayed beautifully.

Even Apple's aging and unsupported Movie Converter worked (as well as it ever did) with the new software.

The installer replaces the Adobe Premiere Presets File with one that includes new DC20 presets in the Project Presets dialog box, saving you the time-consuming task of calculating data rates when configuring new presets yourself.

Ready to roll

Once the board is installed, you can display video either on a Mac monitor or on a video monitor, but not both simultaneously. (You can, however, use two video monitors because the S-video and composite outputs can be active simultaneously.) Although video on the Mac display is choppy — completely dispelling the illusion of full motion — motion on an external video monitor is displayed beautifully. Those less-fortunate among us who learned to disdain dropped frames in first- and second-generation Mac AV models will thrill to see their labors on real TV.

When you install the miroMotion DC20, it puts a module in the Control Strip with two options, one for switching between the video monitor(s) and the Mac screen and one for specifying whether the attached devices (tape decks, camcorders and video monitors) are NTSC or PAL format. Using the Control Strip makes this

See miroMotion, next page

miroMotion

From previous page

feature available from within other QuickTime video editors.

Capturing video using the miroMotion DC20 and Premiere LE is easier than using Premiere and a QuickTime software compressor-decompressor (codec) such as Radius Inc.'s Cinepak, mainly because the miroMotion DC20 works so well. For example, using Cinepak, a busy background in your source video will cause the codec to take longer to compress the video and will generate lower-quality playback. The miroMotion's Motion-JPEG encoder and decoder are much more forgiving than a software codec.

On a Power Mac 9500/132 with 32 Mbytes of RAM and using an external Quantum 1-Gbyte drive, the board consistently achieved a data rate of 1.9 Mbytes per second when capturing at the highest-quality setting. This was less than the theoretical 3.5-Mbyte maximum that the company advertises, but the resulting video was always of very good S-video quality.

As is the case with other hardware compression boards, you can directly play video created with the DC20 only on a DC20-equipped machine, but there are other options. You can preserve your completed video masterpiece (or even your video work in progress) on videotape via Premiere's Export to Video command. You need only tell the DC20 to play movies on video and specify the format — both commands that can be found on the Control Strip. Those creating video for CD-ROM can still take advantage of the miroMotion's very good capturing and compressing capabilities. The final step in this case is to save the video as a Premiere movie using a software codec such as Cinepak.

The miroMotion DC20 uses the Mac's Control Strip for changing the movie display between Mac and video monitors and for specifying the broadcast format of attached devices.

Two problems

We found just two problems with the board, both relatively minor. Switching between the Mac display and a video monitor in low-memory situations sometimes had a delayed effect (which miro notes in the read-me file).

The second problem could be reasonably classified as a bug. Motion-JPEG is sensitive to the quality of the source video. When we digitized from a particularly worn VHS tape, the system would hang during replay.

Conclusions

miro Computer Products has been a Mac developer since 1989, and this experience is reflected in the quality of the miroMotion DC20, which represents a true price/performance breakthrough for mainstream users eager to work with digital video on the Mac. Although the S-video quality and lack of direct sound support make the board unsuitable for professional video heads, for anyone else — from the curious amateur to those producing corporate videos — it's the only show in town playing full-motion, full-screen video at such a low price.

miro Computer Products Inc. of Palo Alto, Calif., can be reached at (415) 855-0940 or (800) 249-6476; fax (415) 855-9004; http://www.miro.com. □

score card

miroMotion DC20

miro Computer Products Inc.
Overall value ◆◆◆◆ **List price: $999**

The miroMotion DC20 video-capture board is a great bargain, putting full-screen, full-motion, 30-fps digitized video within the reach of any PCI-based Power Mac user for less than $1,000. The PCI card, which is bundled with Adobe Premiere LE 4.0, is easy to install and produces good-looking S-video-quality NTSC and PAL images that can be saved to disk and output to any VHS, S-VHS, 8mm or Hi8 video recorder. Except for the lack of integrated audio support (users must rely on the Mac's built-in sound processing capabilities), the DC20 delivers on the promise implied by AV Macs: to bring digital video to mainstream Mac users at a reasonable price.

Performance ◆◆◆◆	**Compatibility** ◆◆◆◆
Features ◆◆◆	**Documentation/support** ◆◆◆◆
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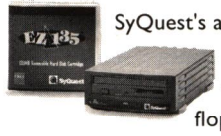

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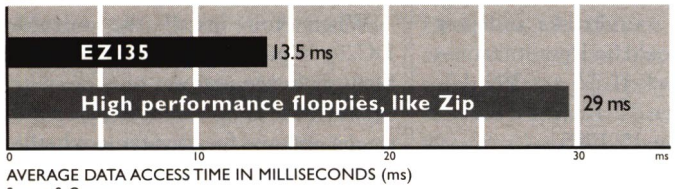

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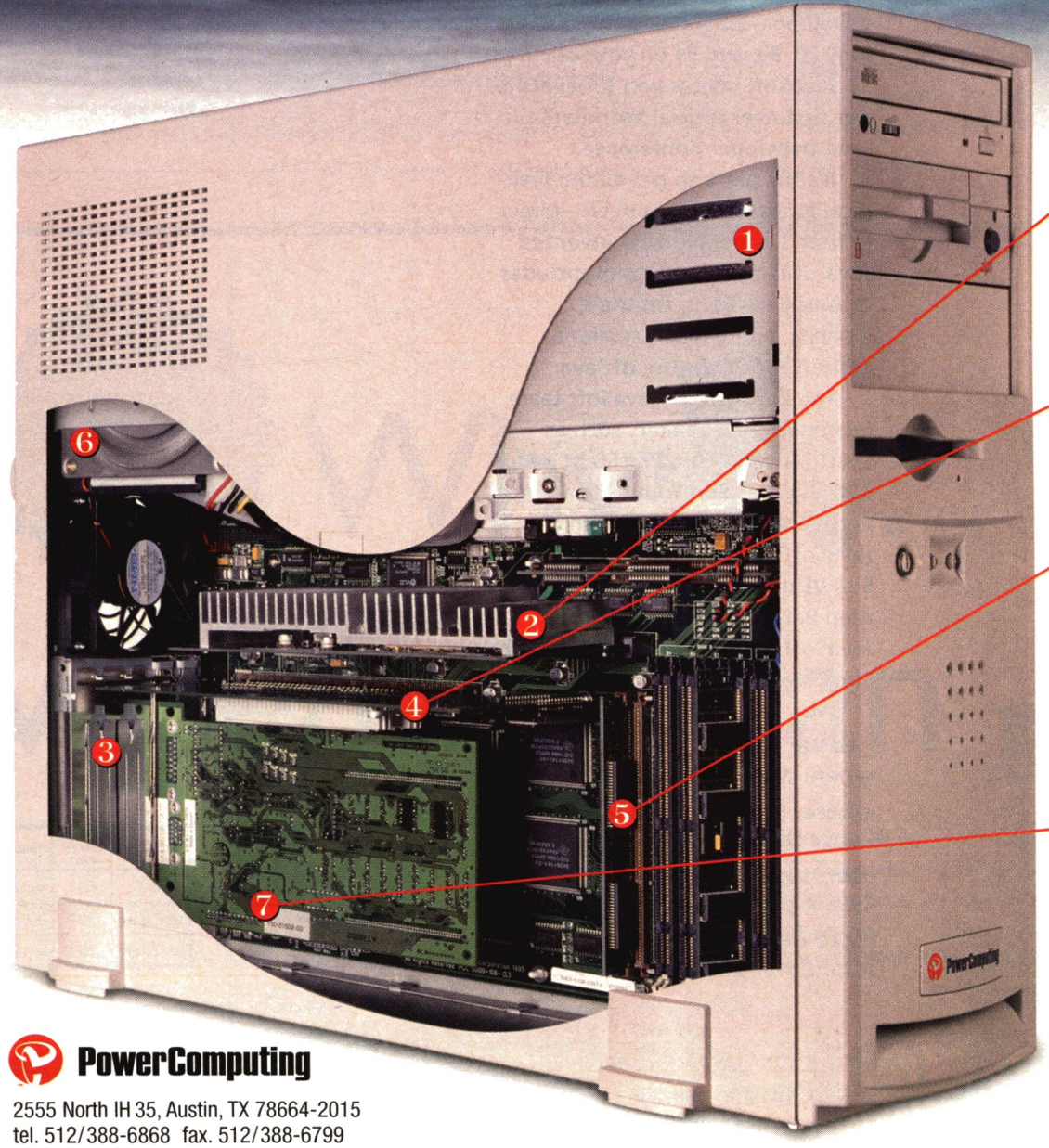

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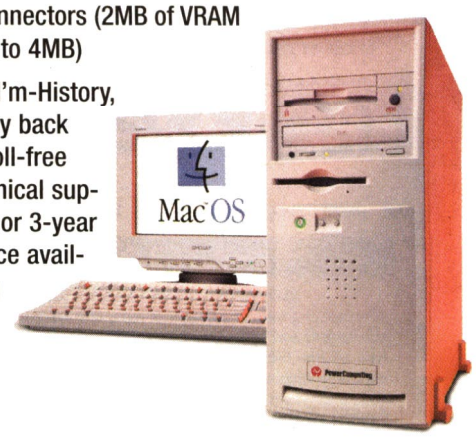

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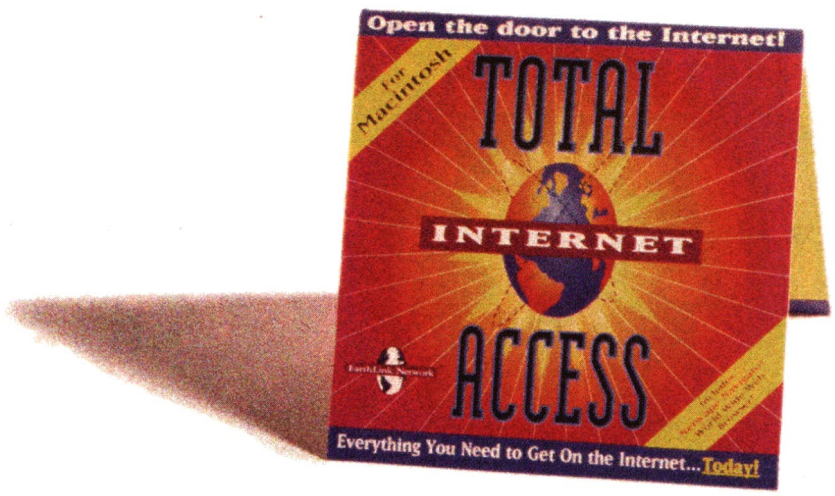

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SPINNING WEBS

The number of Web servers has grown by about 450 percent in the past six months.

— Network Wizards Inc.

ON-LINE ACCESS

It's a Web world, but users still opt for on-line services

By April Streeter

Despite the dizzying growth of the Web as the Internet's information clearinghouse, many corporate users find it more comfortable to stick with a favorite on-line service for information gathering and dissemination — at least for the present.

Dave Arts, vice president of broker services at Century 21 Real Estate Corp., headquartered in Parsippany, N.J., oversees a large project whose goal is to create a private information network for thousands of users at Century 21's 5,000 nationwide franchises. The network will be the main delivery mechanism for the internal documents and detailed reports Century 21 sends monthly to franchisees — a replacement for the nearly 60 feet of paper Century 21 sends to each franchisee every month, Arts said. Century 21 Online, as the project is called, will also include a public area when it debuts this summer. The public area will be a storehouse of demographic information for consumers looking to move to or purchase real estate in major U.S. metropolitan areas.

But rather than join the growing number of companies using Internet technology such as Web servers to create this kind of internal corporate intranet and external public data site, Century 21 decided to stick with America Online as its backbone network. AOL agreed to help the company design the public forum as well as create a version of its interface software with a tile icon that will lead Mac- and Windows-based franchisees directly to the private portion of Century 21 Online.

"We looked for the best provider of this kind of service and AOL was it," Arts said. "The Internet, designed for government and educational purposes, has applicability to commerce but not yet. In our case, and I think in many cases, putting up a Web site would be too risky, as you have the factor that many users simply wouldn't be able to get to the site because of technical hurdles."

Arts said some Century 21 franchises already have their own Web sites, which they use to advertise local real estate for sale. "[But] that's the exception rather than the rule," he said. "If we had decided to develop 21 Online through the Internet it would have been a gargantuan project, not only in terms of developing the Internet tools but also in the time and difficulty involved in educating users."

"We look over our [on-line] usage every month to make sure it's not getting out of hand."

— Bill Hudson, Output Technologies

And with AOL promising to incorporate Microsoft Corp.'s Internet Explorer browser into the AOL interface, Arts said he believes Century 21 Online users will get the best of both worlds. "The complexity of the Web is removed," he said. "If there are Internet sites where [Century 21 Online users] need to go, they are really just a button-click away."

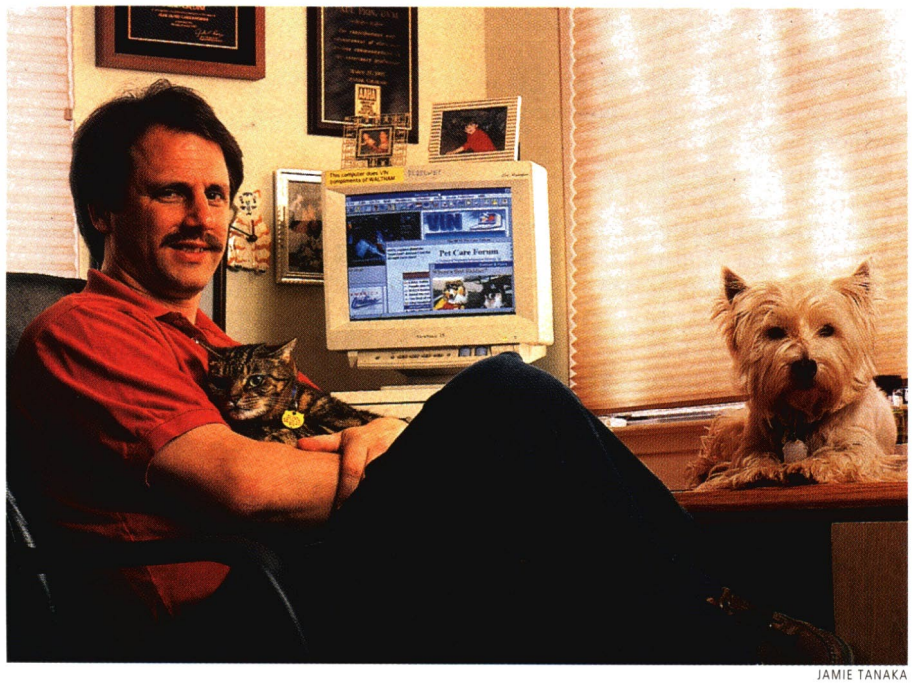
Bright sides

There are a number of reasons corporate users will continue to patronize on-line services. One is simply user comfort levels. Consider the Mac and Windows users supported by Bill Hudson, assistant systems manager with printing and publishing company Output Technologies, a division of DST Inc. in Kansas City, Mo. Hudson oversees about 65 users with different levels of technical competence and varying needs for information access. To serve the different users, Output Technologies currently subscribes to CompuServe, America Online, the Microsoft Network and AppleLink. (The company also subscribed to Apple's eWorld service before it was discontinued at the end of March). It also maintains a direct Internet connection and a workstation dedicated to browsing.

"We talk about the on-line services issue on a monthly basis," Hudson said, admitting that Output Technologies' number of subscriptions may be excessive. "We also look over our usage every month to make sure it's not getting out of hand."

There are good business reasons for each subscription. "We have CompuServe because we're a NetWare shop and Novell [Inc.] posts the latest patches to CompuServe," he said. "AOL was the first to have Internet access, and they have very good Mac forums. Microsoft Network is for our [Windows] NT stuff. AppleLink helps us keep contact with customers."

See Solutions, next page



JAMIE TANAKA

Paul Pion, founder of the Veterinary Information Network, said although information on the network is also on a Web site, the on-line network offers members a sense of community.

GORDON STUDER

MACINTOUCH

RIC FORD

System 7.5.3 CDs hit the street with a surprise

As I write this, CD-ROMs of System 7.5 Update 2.0 are just beginning to reach customers, with a nice surprise. A note in the package says that it is free. Credit cards will not not billed, and checks will be returned. This follows a confusing period in which Apple's order-takers simultaneously gave different callers several different prices for the same update.

One other thing may be confusing, too. Despite its size, System 7.5 Update 2.0 is not a complete operating system. It requires an existing System 7.5.x installation for its base. (Apple plans to sell a complete System 7.5.3 package later.) If your Macintosh model came without system disks, a complete backup before installing the update is even more critical than usual because there is no other recovery in the event of problems.

Some readers had trouble after unchecking the "load only when needed" option in Open Transport's TCP/IP control panel, as suggested in a recent column to avoid memory fragmentation (see 04.08.96, Page 35). The Mac unexpectedly initiated dialing on its own to make a Point-to-Point Protocol (PPP) connection. The solution also applies to any similar

See MacInTouch, next page

SOLUTIONS

From previous page

Hudson admits he would like to eventually slim down his on-line dependence to perhaps just one or two service providers and an Internet connection for Web browsing.

"We would like it if most of the services gradually faded away in favor of the Internet," he said. But he must also keep in mind what his users will be comfortable with. "We have hard-core, dedicated users who will only use the Internet, but then we have those users who don't want and don't need to try anything new. And the bottom line is, my job is to support my users. We're not going to say, 'Oh, you can't get a service that you need to do your job.' "

Hudson's own experiences using the Web for getting software patches and access to technical help led him to see why vendors such as Novell continue to rely on CompuServe as a main forum for customer communication.

"CompuServe is still a more secure environment," he said. "And the Web is just a mixed bag. There's a disparity in what is offered; the quality is uneven. For example, I've seen a well-designed Web site that makes it the easiest place for me to get new scanner drivers, and I've been to other sites that make me think, 'Why am I wasting my time here?' "

Building community

Veterinarian Paul Pion of Davis, Calif., is another firm believer in the usefulness of on-line services. Pion is founder and CEO of the Veterinary Information Network Inc., a continuing-education service for veterinarians that runs as a private forum on America Online. VIN includes a public side, its Pet Care Forum for consumers.

Pion said much of VIN's information is being duplicated on a Web site, but the Web doesn't offer members a sense of community.

"Through the years, many have encouraged us to open our own [VIN] server and give up on AOL," Pion said. "But AOL provides the ability to build community. We can provide databases and 'browsable information' on the Web, but we can't build community on the Web — at least as it exists now."

Pion said he does see content inevitably moving to the Web and advances such as Java applets making it easier for users to access relevant information, but he doesn't know whether VIN users' experience can ever be duplicated in that medium. "When you go out on the Web you feel like you've browsed billboards or at best a magazine with very slow-turning pages," he said. "You don't feel like you've been somewhere. With VIN we want to build relationships, not just content."

Although VIN has a staff of 14, it exists only on-line, which alleviates management headaches that go along with designing, installing and maintaining Internet or Web servers. "We made a commitment to ourselves when we began in 1990. We are information managers/brokers, we are not hardware and software engineers," Pion said.

If the Web wins

Gary Arlen, president of market research company Arlen Communications Inc. of Bethesda, Md., estimates that more than half the on-line services subscribers use the services as their main conduit to the Internet. While the Web will most likely supersede the services as the world's data warehouse, Arlen said, corporate users will probably find good reasons to continue subscribing to the on-line services that survive.

Pion said: "I do believe in time the Web, or whatever we call it and whatever it looks like, may in a few years replace the model of the current AOLs and CompuServes. But we have full confidence that AOL can continue to be a leader and help shape that [new] on-line world." □

Casting a wide Internet

In the past two years, growth of Web servers has outstripped all other areas of Internet expansion. Market analysis company Zona Research Inc. of Redwood City, Calif., predicts that about a quarter of a million Web servers will ship by the end of this year, to be used as both public access sites and as the building blocks for intranets.

Time to feast

The Web feeding frenzy has spurred many companies to consider Internet access and Web sites a competitive necessity. It has also prompted the "Big Three" on-line services — CompuServe Inc., America Online Inc. and Microsoft Network — to try to keep subscribers from going directly to the Web by making it easier for them to get to and browse the Internet through their services.

At present, the two biggest services, CompuServe and America Online, aren't hurting for users. CompuServe claims more than 4 million users and AOL said it has topped the 5-million mark.

CompuServe is still considered to have a slight edge on AOL in terms of business-oriented forums and services, and AOL has a better reputation for ease of use. The services can cite statistics that prove a large number of their users rely on them as an Internet access point: AOL, for example, said it processes more than 28 million Web hits by users each day and enables them to read about 5 million articles from Internet-based newsgroups.

On-line content, R.I.P.

But an area where it is more difficult for services to keep up with the Web is in the generation of new and interesting data, or content.

"On-line content is dead," said Simon Higgs, an Internet consultant and admitted Web bigot based in Laguna Beach, Calif. "Everyone is putting their own Web site up, even if it is on someone else's server. The only practical use for new on-line services is providing outside sales reps with e-mail accounts."

While Higgs exaggerates somewhat, the universality of the Internet and the fact that it seems to offer its oceans of content free are powerful lures for new users and those who get information through an on-line service. While on-line services may cost less than a direct Internet connection, they generally charge more for access to premium content.

To make matters worse, the on-line services must look forward to increased competition for subscribers as the phone companies, such as MCI Telecommunications Corp., try their hand at packaging Internet content and connectivity for consumers and corporations. — By April Streeter

MACINTOUCH

From previous page

autodialing problem: Check the Disable Auto Connect option in the ConfigPPP control panel.

PPP software is in a state of confusion at the moment, following partial releases and pre-releases of PPP components by various parties that are addressing user interface and compatibility problems.

New MacPPP

Apple recently posted MacPPP Version 2.5 at http://cybertech.apple.com. According to the documentation, the company is offering it "as a convenience" for users of any previous version but will provide support only to Apple Internet Connection Kit owners. This release supersedes the version on the System 7.5 Update 2.0 CD-ROM.

We should soon have a FreePPP 2.5 package from the FreePPP Group that provides a nicer interface and at least as many features as Apple's version. Both of these releases, derived from joint development efforts, claim compatibility with virtual memory.

The commercial MacSLIP from Austin, Texas-based Hyde Park Software Inc. is another option (see 01.15.96, Page 33), and I recently learned that it has some extra advantages. It reportedly supports virtual memory; switches configurations (even to Ethernet) without restarting; works with both MacTCP and Open Transport; supports a full range of Mac models; and provides features used by the freeware MacTraceroute utility, which does not work with other PPP implementations.

Memory management is a persistent pain in the Macintosh, but utilities can help.

More information about the product, plus patchers for updating to Version 3.0.3, are available at http://www.zilker.net/~hydepark/. Jim Browne's MacTraceroute is available at ftp://ftp.jbrowne.com/.

In other updates, Caleb Clauset improved the Open Transport compatibility patcher for LaserWriter Bridge and added a patcher for LocalTalk Bridge. These files are in the comm/atlk/ directory in Info-Mac libraries (and are linked from my home page).

Memory management

Frankly, in comparison with some competitive operating systems, memory management is a persistent pain on the Mac. The system aborts an operation, citing memory problems, when there are megabytes of free RAM. Basic cut and paste operations fail for medium-sized Clipboards. The Finder gets upset and begins to close windows and display alert dialogs about memory problems. Setting memory allocations with Get Info, a critical matter, is completely unintuitive for any nontechnical user, and many crashes are rooted in memory-management problems.

System 7.5 Update 2.0, despite all its fixes, continues to suffer from memory problems, and there is no simple solution. The TCP/IP control panel option mentioned above may help, but remember that Open Transport uses RAM when it loads its shared libraries, as do other shared libraries as they are loaded.

Open Transport gobbles extra RAM when virtual memory is disabled, but virtual memory creates problems of its own. Some freeware and shareware utilities can at least help manage memory, if not solve fundamental Mac OS limitations.

The freeware Mac OS Purge instantly releases memory trapped by previously run applications. Memory Mapper 1.3, also freeware, shows graphically exactly how your RAM is being used and how free space is fragmented. These two are available in the cfg/ directory of the Info-Mac file libraries. The shareware OtherMenu 1.8.3, in the gui/ directory, includes a Memory Map that also shows where memory blocks are locked. □

Comments on MacInTouch are welcome at (508) 897-2621. Please address e-mail to ricford@macintouch.com on the Internet or 72511,44 on CompuServe. The MacInTouch home page is at http://www.macintouch.com/.

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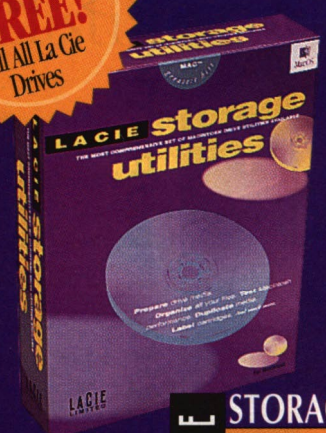

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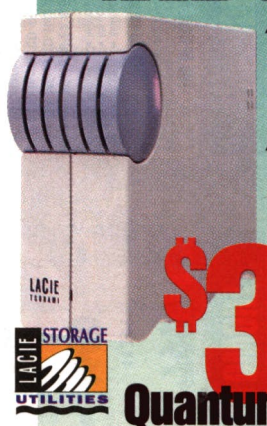

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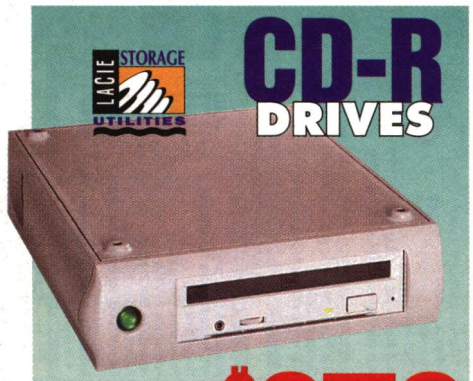

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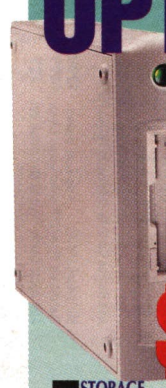

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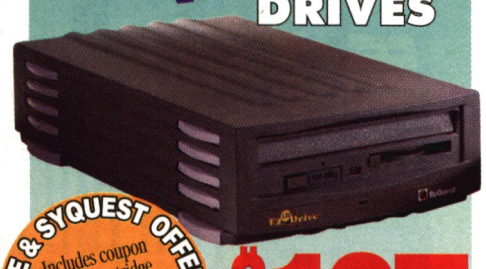

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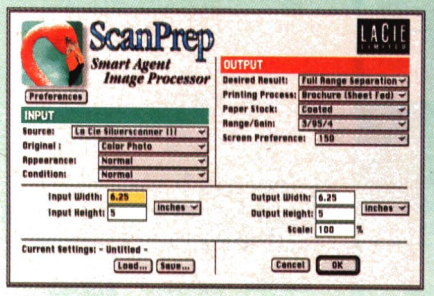

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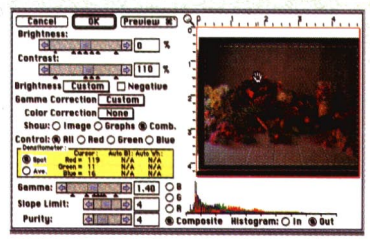

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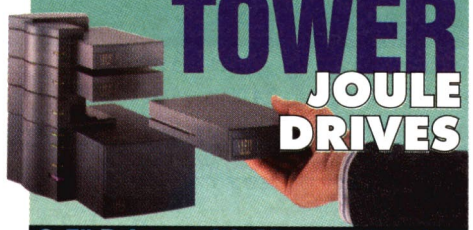
2160MB Ultrastar ES	5 yr. warr.	$669
8.0GB DAT DDS-2	Includes Retrospect	$959
8.0GB TURBO DAT DDS-2	Inc. Retrospect	$1159
230MB Optical	1 yr. warr.	$499

TOWER JOULE DRIVES



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2160MB Ultrastar ES	5 yr. warr.	$669
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230MB Optical	1 yr. warr.	$529

CLEARANCE

90 day warranties. Some drives refurbished. No rain checks. Quantity is limited to to stock on hand.

HARD DRIVES	PRICE	QTY.
85MB PocketDrive External	$79	39
127MB Quantum Int. (unformatted)	$49	36
340MB Quantum Internal	$89	27
425MB Quantum Internal	$99	51
1080MB Quantum Int. (unformatted)	$209	3
1080MB Quantum Internal	$219	20
1.2GB Seagate 5.25 Internal	$229	9
1.6GB Seagate Internal	$289	8
1.6GB Seagate External	$329	2
2.1GB Quantum Int. (unformatted)	$429	27
4.3GB Quantum Internal	$849	18
REMOVEABLE DRIVES	**PRICE**	**QTY.**
600MB Teac Tape Int. (unformatted)	$49	34
600MB Teac Tape Internal	$59	24
600MB Teac Tape External	$69	9
44MB SyQuest Internal	$69	13
128MB Optical Internal	$129	55

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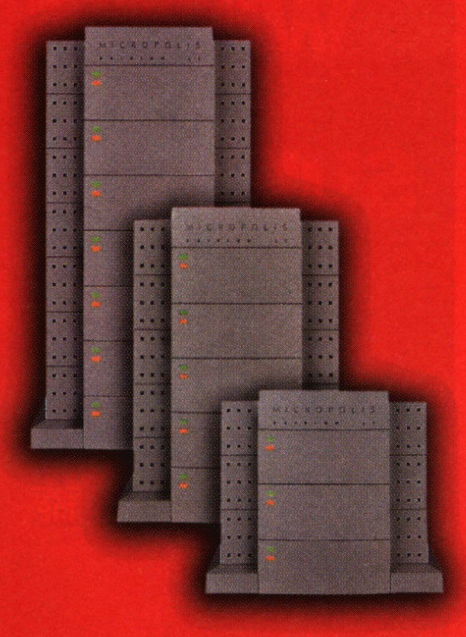

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MDLT4300/AV	4.3GB
MDLS9100/AV	9.1GB

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HARD DRIVES

ALL DRIVES ARE PREFORMATTED, TESTED AND PACKAGED WITH SCSI MANAGER 4.3 COMPATIBLE DRIVERS. EXTERNAL DRIVES INCLUDE CHOICE OF 25-50 OR 50-50 PIN CABLE.

Capacity	*Model No.*	*Mechanism*	*Seek*	*Warranty*	*Internal*	*PHASER-I*
420 MB	DT-420TB	Quantum	11ms	2 yrs	$150	$225
850 MB	DT-850TB	Quantum	11 ms	2 yrs	$199	$275
1.05 GB	DT-51080	Seagate NEW LOW PRICE!	10.0 ms	5 yrs	$269	$344
1.0 GB	DT-1080FB	Quantum	11ms	3 yrs	$269	$344
1.05 GB	DT-31230	Seagate NEW LOW PRICE!	9.0 ms	5 yrs	$380	$455
2.0 GB	DT-4221	Micropolis NEW LOW PRICE!	8.0 ms	5 yrs	$545	$625
2.0 GB	DT-2490	Hewlett Packard	9.0 ms	5 yrs	$950	$1,050
2.1 GB	DT-32550	Seagate Barracuda II NEW LOW PRICE!	8.0 ms	5 yrs	$725	$800
4.3 GB	DT-3243	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$999	$1,075
4.3 GB	DT-15230	Seagate Hawk 4 NEW PRODUCT!	9.0 ms	5 yrs	$899	$975
4.3 GB	DT-15150	Seagate Barracuda NEW LOW PRICE!	8.0 ms	5 yrs	$1,175	$1,250
9.0 GB	DT-1991	Micropolis NEW LOW PRICE!	12 ms	5 yrs	$1,950	$2,050
9.0 GB	DT-410800	Seagate Elite 9 NEW LOW PRICE!	11 ms	5 yrs	$2,025	$2,125

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DIRECTTECH SYSTEMS IS AN AUTHORIZED A/V PARTNER WITH SEAGATE AND MICROPOLIS.

Capacity	*Model No.*	*Mechanism*	*Seek*	*Warranty*	*Internal*	*PHASER-I*
1.05 GB	DT-31230AV	Seagate	9 ms	5 yrs	$380	$455
2.0 GB	DT-4221AV	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$600	$775
2.1 GB	DT-32550AV	Seagate Barracuda	8.0 ms	5 yrs	$725	$800
4.3 GB	DT-3243AV	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$1,050	$1,125
4.3 GB	DT-15150AV	Seagate Barracuda	8.0 ms	5 yrs	$1,175	$1,250
9.0 GB	DT-1991AV	Micropolis NEW LOW PRICE!	12 ms	5 yrs	$2,050	$2,150
9.0 GB	DT-410800AV	Seagate Elite 9 NEW LOW PRICE!	11 ms	5 yrs	$2,025	$2,125

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MOST EFFECTIVE WHEN COMBINED WITH A FAST/WIDE ATTO BOARD. CALL FOR SPECIAL CONFIGURATIONS!

Capacity	*Model No.*	*Mechanism*	*Warranty*	*Internal*	*PHASER-I*
2.1 GB	DT-32550W	Seagate Barracuda 2LP Wide	5 yrs	$799	$899
2.1 GB	DT-4221W	Micropolis 4221Wide	5 yrs	$625	$725
4.3 GB	DT-15150W	Seagate Barracuda 4 Wide	5 yrs	$1,225	$1,325
4.3 GB	DT-3243W	Micropolis 3243Wide	5 yrs	$1,050	$1,150
9.0 GB	DT-1991W	Micropolis 1991Wide	5 yrs	$2,085	$CALL
9.0 GB	DT-1991AVW	Micropolis 1991AVWide	5 yrs	$2,185	$CALL
9.0 GB	DT-410800W	Seagate Elite 9 Wide	5 yrs	$CALL	$CALL

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MEDIA 100 * RADIUS * DIGITAL VIDEO * TARGA 2000
ARRAYS INCLUDE - ATTO CARD, REMUS & 2 FAST/WIDE DRIVES

Capacity	*Model No.*	*Mechanism*	*Seek*	*Warranty*	*EXTERNAL*
4.0 GB	DT-32550W-2	Seagate - Fast/Wide Barracuda 2LP (2)	4.0 ms	5 yrs	$CALL
8.0 GB	DT-3243WAV	Micropolis - Fast/Wide 3243AV (2)	4.0 ms	5 yrs	$CALL
18.0 GB	DT-1991WAV	Micropolis - Fast/Wide 1991AV (2)	4.0 ms	5 yrs	$CALL
CALL FOR MORE INFORMATION ON DIRECTTECH DISK ARRAYS!					
ATTO Silicon Express IV		Nubus Fast/Wide Accelerator			$CALL
ATTO Express PCI		Dual Channel - PCI -Fast/Wide			$CALL
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200 MB	SQ5200	$420	$480
270 MB	SQ3270	$420	$470

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15-30 GB	DLT-2000XT	DLT	$4,399

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1.3 GB	HP-C1716	23 ms	$1,999
1.3 GB	Maxoptix T-III	18 ms	$2,199

MEDIA

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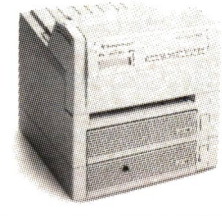

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Model	Capacity/Feature	Awards	Internal	SR2000
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APS SQ 5200 Ultimate storage flexibility	194MB		N/A	389.95

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APS CD-ROM DRIVES

Model	Features	Awards	Internal	SR2000
APS T 3701 Sustained data transfer rates up to 1000KB per second!	6.7X-SPEED		$249.95	$299.95
APS PD4 600MB optical storage with 4X CD-ROM in one device	CD-ROM/Removable Optical		N/A	499.95*
APS CD-R FREE TOAST CD-ROM Pro CD recording software ($500 value)	Recordable CD-ROM	NEW LOW PRICE	N/A	899.95*
APS CD-R Pro FREE TOAST CD-ROM Pro CD recording software ($500 value)	4X4 Performance CD-R	NEW LOW PRICE	N/A	1799.95**
APS CD-R Mastering System 4X read/4X write recording engine and a 4GB AV scratch disk			N/A	2999.95†*

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APS MO DRIVES

Model	Capacity/Features	Awards	SR2000
APS 230MB MO Olympus Mechanism	4500 rpm drive		$449.95
APS 1.3GB MO Sony SMO F-531 Mechanism	4MB cache		1699.95

APS QIC & DAT TAPE BACKUP SYSTEMS

Model	Capacity/Features	Awards	Internal	SR2000
APS HyperQIC™ QIC 3080 Mechanism	2GB	MacWeek	N/A	$499.95
APS DAT DDS-1 Non-Compression Mechanism	2GB		$649.95	699.95
APS HyperDAT® DDS-2 Compression Mechanism	8GB		849.95	899.95
APS HyperDAT® Pro DDS-2 High-Speed Mechanism	8GB		1049.95	1099.95

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Model	Capacity/Features	Awards	Full-Height
APS DLT30 Digital Linear Tape Mechanism	30GB		$3999.95
APS DLT40 Digital Linear Tape Mechanism	40GB	MacUser Editors' Choice Award 1995 FINALIST	5499.95
APS DLT4500 Loader Digital Linear Tape Mechanism	200GB		9999.95
APS DLT4700 Loader Digital Linear Tape Mechanism	280GB		11499.95

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APS DLT30 & DLT40

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		SALE PRICE
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106152	3-PK 230MB MO	79.95

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- ✔ 2MB cache buffer boosts performance
- ✔ 5-year warranty

Power Matched for Power PC

MacUser ZD LABS ★★★★½

Using an embedded servo as well as a high-performance 7200 rpm mechanism, the APS Q 4.0 is equally at home with AV and non-AV applications. It is based on the Quantum Atlas XP 34300 mechanism with a 4300MB formatted capacity. The drive employs a huge 2048KB cache buffer and a unique cache-management algorithm to push data transfer rates as high as 10MB per second.

HIGH PERFORMANCE SCSI 1.2GB

APS Q 1280

JUST $269.95

Internal configuration SCSI

Quantum

- ✔ High areal density and PRML read channel
- ✔ 5400 rpm mechanism
- ✔ 3-year warranty
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Power Matched for Power PC

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2GB ON YOUR DESKTOP

APS I 2160

$479.95

Internal configuration

IBM

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- ✔ Over 2060MB formatted capacity
- ✔ The best value for performance and capacity
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Power Matched for Power PC

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APS SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS Q 840 Quantum 840 Trailblazer	811MB 4500 rpm	MacUser ZD LABS ★★★★	$189.95	NEW LOW PRICE! $259.95
APS Q 1080 Quantum 1080 Fireball	1042MB 5400 rpm	MacWeek ◆◆◆◆ MacUser ZD LABS ★★★★	239.95	299.95
APS Q 1280 Quantum Fireball II 1280	1222MB 5400 rpm	Power Matched for Power PC	269.95	369.95
APS I 2160 IBM Ultrastar ES	2063MB 5400 rpm	Power Matched for Power PC	479.95	579.95
APS MS 2000 Micropolis 4421	2047MB 5400 rpm	Power Matched for Power PC	499.95	599.95
APS Q 2210* Quantum Capella	2047MB 5400 rpm	MacUser ZD LABS ★★★★	599.95	699.95
APS ST 4200 Seagate ST 15230N Hawk	4094MB 5400 rpm		899.95	999.95

While supplies last

APS IDE DRIVES FOR MACINTOSH

Model	Capacity/Features	Internal
APS Q 1280A Quantum Fireball II 1280	1222MB 5400 rpm (Fast ATA-2)	$239.95
APS ST 2140A Seagate Medalist ST32140A	2167MB 5400 rpm (Fast ATA-2)	349.95

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Then call 816-920-4150 from a fax machine with a handset or fax modem and follow the instructions.

APS HIGH-PERFORMANCE SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0 Micropolis 4221	1955MB 7200 rpm	Power Matched for Power PC; MacUser ZD LABS ★★★½	$599.95	$699.95
APS MS 2.0AV Micropolis 4221AV	1955MB 7200 rpm	Power Matched for Power PC	699.95	799.95
APS Q 2.0 Quantum Atlas XP32150	2050MB 7200 rpm	Power Matched for Power PC; MacUser ZD LABS ★★★★	699.95	799.95
APS ST 2.0 Seagate ST 32550N	2047MB 7200 rpm		749.95	849.95
APS MS 4.0 Micropolis 3243	4064MB 7200 rpm	Power Matched for Power PC; MacUser ZD LABS ★★★★	999.95	1099.95
APS Q 4.0 Quantum Atlas XP34300	4101MB 7200 rpm	Power Matched for Power PC; MacUser ZD LABS ★★★★½	949.95	NEW LOW PRICE! 1049.95
APS MS 4.0AV Micropolis 3243AV	4064MB 7200 rpm	Power Matched for Power PC	1099.95	1199.95
APS ST 4.0 Seagate ST 15150N	4094MB 7200 rpm	MacWeek ◆◆◆◆ MacUser ZD LABS ★★★½	1199.95	1299.95
APS MS 9.0 Micropolis 1991	8669MB 5400 rpm		1899.95	2099.95*
APS MS9.0AV Micropolis 1991AV	8669MB 5400 rpm	MacUser ZD LABS ★★★★	1999.95	2199.95*
APS ST 9.0 Seagate ST410800N	8669MB 5400 rpm		2199.95	2399.95*

- 30-day money-back guarantee on all APS brand products. Your risk is the cost of shipping.
- Drive-for-Drive Repair or Replacement Warranty. APS will, at its discretion, replace or repair products found to be defective according to the terms of the product's warranty.
- Refused orders subject to 20% restocking fee.
- Listed capacities are formatted
- Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.
- Internal hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh where applicable. External SCSI-2 drives come with a premium SCSI cable, power cord and user guide.
- All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, and APS Technologies' APS PowerTools SCSI formatter/hard disk partitioner. You may need to install system software appropriate to your machine before use.
- Prices and specifications are subject to change without notice. Not responsible for typographical errors.
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APS FAST/WIDE SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0W Micropolis 4221W	1955MB 7200 rpm	Power Matched for Power PC	$699.95	$799.95
APS Q 2.0W Quantum Atlas XP32150W	2050MB 7200 rpm	Power Matched for Power PC	799.95	899.95
APS MS 4.0W Micropolis 3243W	4064MB 7200 rpm	Power Matched for Power PC	1099.95	1199.95
APS Q 4.0W Quantum Atlas XP34300W	4101MB 7200 rpm	Power Matched for Power PC	1079.95	1179.95

FAST/WIDE ADAPTER CARDS

Model	External SCSI Connection	Internal
QLogic Fast!SCSI Mac PCI-W Adapter for Fast/Wide drives	HD 68-Pin	$379.95
SiliconExpress IV For NuBus Quadras & Power Macs only. Fast/Wide adapter card.	HD 68-Pin	849.95

APS IDE POWERBOOK DRIVES

Model	Capacity/Features	Awards	Internal
APS Q 810 Quantum Europa	778MB 3800 rpm, Fast ATA-2		$379.95
APS Q 1.08 Quantum Europa	1037MB 3800 rpm, Fast ATA-2		474.95

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APS Technologies

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MONITORS

NEC

14" C400 Monitor

NEW PRODUCT

$299

N026 102

- 14" AntiStatic, Non-glare CRT
- .28mm dot pitch
- Max Resolution: 832x624
- ONE year Warranty

1 Year Manufacturer's Warranty

N026 1029 **14" C400 Monitor** $299
13.2" Viewable Image size

N026 1033 **15" C500 Monitor** $399
13.8 Viewable Image Size

N026 1031 **15" MultiSync XV15+** $469
13.8 Viewable Image Size

17" MultiSync XV17+

BEST BUY

$799

N026 1032

FEATURES

- 17" Flat Square Technology CRT
- 15.6" Viewable Image Size
- MAC Resolution up 1024 x 768 NI
- 0.28 mm dot pitch
- On-Screen Manager

3 YEAR LIMITED WARRANTY

N026 1032 **17" MultiSync XV17+** $799

N026 1007 **17" NEC XE17** $999

N026 1009 **17" NEC XP17** $1049

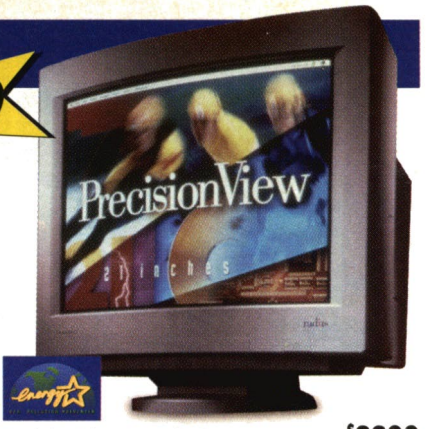
N026 1010 **21" MultiSync XE21** $1799
19.8 Viewable Image Size

radius

PrecisionView™ 21 Display

$2299

R016 1032



High Quality, High Resolution Display for Creative Professionals.
Designed around a 21" Diamondtron tube, the PrecisionView™ 21 offers Super Resolution capability of 1600 x 1200, On Screen display of digital controls, and advanced ergonomics for comfort and ease of use. The PrecisionView 21 is designed with multiple white point settings, cross-platform plug and play compatibility for Mac™OS and Windows-based systems

- DiamonTron Color Tube with aperature grill
- .30mm Dot Pitch
- Energy Star Compliant

R016 1032 **PrecisionView™ 21 Display System** $2299

R016 1031 **PressView 17SR Display System** $1999

IntelliColor Display/20e

$1799

FEATURES

- Preset resolutions: 640 x 480 at 60Hz up to 1380 x 1040 at 74hz
- 20-inch Trinitron, vertically flat tube
- 15.2 in x 11.5 in maximum viewing area
- 0.31mm Phosphor Trio Pitch
- 10 pre-sets, 15 programmable settings

BEST BUY

R016 1009 **IntelliColor Display/20e Display System** $1799

Portrait Display Labs

Pivot 1700

The Monitor that shows you the whole ENCHILADA

$989

P026 1004

3 Year Manufacturer's Warranty

MANUFACTURER'S 30 DAY MONEY BACK GUARANTEE

FEATURES

- Tilt/swivel base
- Flat sq. CRT w/anti-glare screen
- Up to 16.7 million colors
- Max Res: 1024 x 768
- Full page views of documents, web pages, & Excel worksheets
- Easy to use digital controls

P026 1004 **Portrait/Pivot 1700** .28 dot pitch $989

P026 1003 **Portrait/Pivot 1700** .26 dot pitch $1049

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17GA PerfectSound Multimedia Monitor

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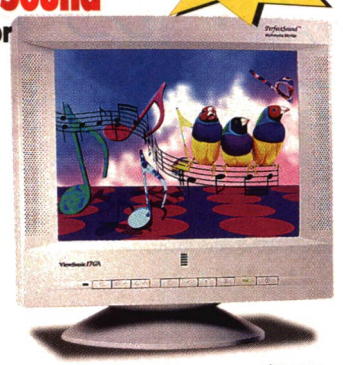


FEATURES

- HiFi Speakers built in
- 17" (15.7" Viewable Image Size)
- Max Res: 1280 x 1024
- PC and Mac compatible

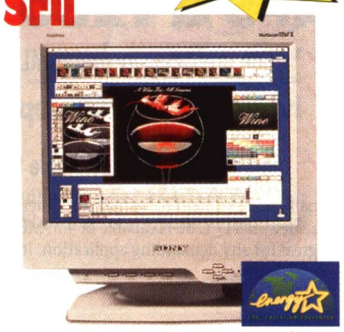
BUILT-IN STEREO SPEAKERS

V056 1016 **ViewSonic 17GA Multimedia Monitor** $469

SONY

Multiscan 17SFII

$915



FEATURES

- 16.0" Viewable image size
- .25 mm Aperture Grille Pitch
- Max Macintosh Resolution: 1024 x 768 ™ 75hz
- On screen display of screen controls
- Macintosh Adapter included
- 3 Year Warranty parts and 2 Year CRT

S106 1018 **Sony Multiscan 17SFII** $915

S106 1017 **Sony Multiscan 15SFII** $515

VIDEO CARDS

radius

Thunder 30 PCI Cards

- 30-bit color with built-in photoshop Acceleration
- Real-time CMYK-to-RGB display
- On-the-fly resolution and bit-depth switching

R013 1070

$799

R013 1070 **Thunder 30/1152** PCI Card $799
Resolution up to 1152 x 870

R013 1073 **ThunderColor 30/1600** PCI Card $1999
Resolution up to 1600 x 1200

A143 1010

$369

XCLAIM GA

ATI TECHNOLOGIES INC.

ATI's renowned *mach64* graphics acceleration chip gives the XCLAIM GA its exceptional abilities. It features 2MB or 4MB of VRAM,& displays up to 16.7 million accelerated colors at 1152x870 resolution.

A143 1010 **ATI XCLAIM GA** 2MB PCI video card $369

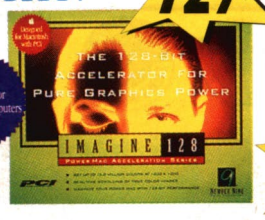
A143 1009 **ATI XCLAIM GA** 4MB PCI video card $499

NUMBER NINE VISUAL TECHNOLOGY

Imagine 128

N080 1003

$729



Designed for Macintosh computers with PCI

- 128-bit graphics engine
- 128-bit internal data path
- 128-bit memory bus
- Exclusive WideBus™ design means drawing pathways are a full 128-bits wide from processor to high speed VRAM

N080 1002 **Imagine 128** 8MB Accelerator $1169

N080 1003 **Imagine 128** 4MB Accelerator $729

DIGITAL VIDEO

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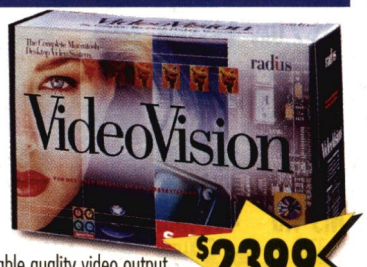
VideoVision Studio 2.5.1



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Broadcast-Quality Video
VideoVision studio can deliver broadcastable quality video output in NTSC and PAL timing.

16-bit Audio
VideoVision Studio can now simultaneously capture video with 16-bit, 44.1 KHz stereo sound using the on-board audio of the Power Macintosh.

R013 1018 **VideoVision Studio 2.5.1** $2399

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Telecast combines component video, professional audio with an open architecture to give video professionals hardware and software choices. Telecast reinvents the entire post production process providing options for producing quality programming in a variety of formats.

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Mac IIci, IIsi, IIvx, Performa 600

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Runs your current software up to twice as fast, and runs PowerPC applications 7 to 11 times faster.

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D040 1018 **40/Mhz Turbo 040** with 128K cache $599

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NEW PRODUCT

$599

Just plug in the Carrera040 accelerator and instantly get blazing performance from your existing Mac

M264 1003 **40/80Mhz Carrera 040** with FPU $599

SCANNERS

ES1200C Pro EPSON

FEATURES
- 600 dpi optical resolution, and up to 4800 dpi(via interpolation)
- 30-bit color scanning
- Pro Package includes:
  Adobe Photoshop
  Scantastic
  KAI's PowerTools
  SCSI cable

E045 1003 **Epson ES1200C Pro-MAC Color Scanner** Full Package $1179

E045 1007 **Epson ES1200C LE-MAC Color Scanner** w/Scantastic $949

E045 1013 **Epson ES1000C LE-MAC Color Scanner** $735

Powerlook II UMAX

The Magic of Color™

FEATURES
- 36-bit color scanning, 600 x 1200 dpi
- 3.3 Dynamic Range
- Includes Transparency Adapter
- Package includes:
  Adobe Photoshop
  KAI's PowerTools SE
  PowerPhotos CD
  WordLinx OCR
  Pixar Typestry
  Pixar 128CD

U010 1052 **PowerLook II** 36-bit color scanning, 600 x 1200 dpi $2495

Arcus II AGFA

FEATURES
- 600 dpi & 36-bit color scanning
- 3.0 Dynamic Range
- Includes Transparency Module
- Package includes:
  - Adobe Photoshop
  - Agfa FotoLook Scanner driver software
  - Agfa FotoTune Color Management software

A055 1001 **AGFA Arcus II** $2195

A055 1011 **AGFA StudioScan IIsi** $699

RELISYS

SCORPIO
- 300 x 1200 dpi
- 2400 x 2400 interpolated
- 30-bit color scanning

TAURUS
- 600 x 1200 dpi
- 9600 x 9600 interpolated
- 30-bit color scanning

Both include : E-Disk software, OmniPage LE and SCSI package

R060 1016 **Relisys Scorpio Color Scanner** $399

R060 1017 **Relisys Taurus Color Scanner** $699

Umax Vista-S12 LE

FEATURES
- 600 dpi & 33-bit equivalent analog gamma correction
- Package includes Adobe Photoshop LE 3.0, WordLinx OCR, Corel Professional Photos CD

U010 1055 **Vista-S12 LE** $799

MICROTEK ScanMaker III

Better Images Through Innovation.

FEATURES
- 600 dpi & 36-bit color scanning
- Includes Transparency Adapter
- Single pass scanning
- DCR (Dynamic Color Rendition) calibration/correction system
- Apple ColorSync compatible
- Package includes Adobe Photoshop

M150 1006 **Microtek ScanMaker III** $1989

INPUT DEVICES

VISIONEER PaperPort Vx

FEATURES
- 6 second typical scan time
- 400 dpi resolution
- 256 Gray-scale imaging
- Scan Documents up to 30" long
- Includes OmniPage Lite, CardScan SE, PictureWorks Copier

V029 1008 **PaperPort Vx for Macintosh** $279

WACOM Art Z II 6" x 8" ArtPad

Don't buy a tablet that uses batteries...get a WACOM

W010 1028 **ArtZ II 6x8** $298

MODEMS

GLOBAL VILLAGE COMMUNICATION TelePort Platinum Fax/Modem

G050 1016 **TelePort Platinum** 28.8 data, 14.4 S/R, GlobalFax, GlobalFax OCR $199

G050 1019 **PowerPort Platinum Pro** $499
Combo 10base-T Ethernet, 28.8 data, 14.4 S/R, Fax, Type II PC Card

US Robotics 28.8 Sportster

The Intelligent Choice in Data Communications

FEATURES
- 28.8 V.34 and 33.6 kbps
- V.32 bis at 14.4 kbps
- V.42/mnp 2-4 error control
- Macverter Fax and Data Software
- CD-ROM of Internet Access Software
- Discover the World Wide Web with your Sportster Guidebook

U020 1021 **US Robotics 28.8 Sportster for Mac** $199

U020 1025 **US Robotics Sportster voice 28.8 w/voice** $259

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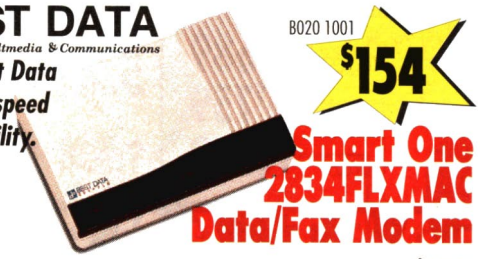

Smart One 2834FLXMAC Data/Fax Modem

B020 1001 **Best Data 2834FLXMAC** 28,8 v.34 External Fax/Modem $154

B020 1003 **Best Data 2834VLXMAC** 28,8 v.34 Ext. Fax/Modem w/Voicemail $188

FastMac V.34 28.8 Fax/Data Modem

FEATURES
- 28.8 kbps data modem
- 14.4 kbps send/receive fax
- Class 1 or 2 fax support
- V.42/MNP2-4 error control
- V.42bis/MNP5 data compression
- MacComCenter software for Mac

B030 1007 **Fast Mac V.34 28.8 bps Fax/Data Modem** $139

PRINTERS

EPSON Stylus Color Pro

FEATURES
- 720 x 720 dpi photo quality on plain paper
- PostScript upgradeable
- True black laser quality text
- Pantone matching
- Text print speed up to 3ppm, color 1ppm

E047 1019 **Epson Stylus Color Pro** $499

E047 1018 **Epson Stylus Color II** $299

HEWLETT PACKARD LaserJet 5MP

FEATURES
- 600 x 600 dpi laser printing with HP Resolution Enhancement technology
- 120 levels of grey
- 6 ppm print speed
- 3MB RAM standard, expandable up to 35 MB w/Adobe Memory booster
- Adobe PostScript level 2 with 35 scale typefaces

H047 1030 **HP LaserJet 5MP Printer** $1045

Epson Stylus Color Pro XL

FEATURES
- Prints up to 12.5" x 18" full bleed in Photoquality color
- 720 x 720 dpi photo quality with Microdot technology
- Optional Adobe PostScript with Pantone Color Calibration

E047 1022 **Epson Stylus Color Pro XL** $1799

E040 1070 **Adobe PostScript Level 2** Software Upgrade for Stylus Pro XL $265

HP DeskJet 855Cxi Printer

FEATURES
- ***COLOR PRINTER***
- Dual I/O for either PC or Macintosh connection
- Black print speed up to 7ppm
- Color print speed up to 3ppm
- Handles plain and special papers, transparency film, and envelopes

H047 1065 **HP DeskJet 855Cxi InkJet Printer** $499

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CLUBMAC HARD DRIVES

Quantum

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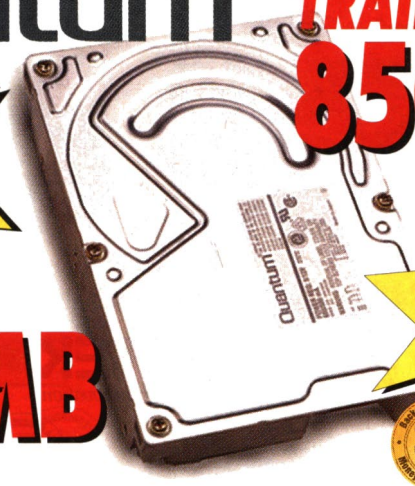

TRAILBLAZER 850MB

14ms Access Time

Internal TrailBlazer C104 0002

$199

FIREBALL 1280MB

12ms Access Time

Backed by ClubMac's 30 DAY Money Back Guarantee

BEST BUY

Capacity	Model	Part No.	Internal	Part No.	External
850MB	Trailblazer 14ms	C104 0002	$199	C104 0052	$259
1080MB	Fireball 12ms	C104 0000	$239	C104 0050	$299
1280MB	Fireball 12ms	C104 0001	$299	C104 0051	$359

BEST BUY

$969

ATLAS 4.3GB

7200 RPM

1024K CACHE

Internal Atlas C104 0005

Backed by ClubMac's 30 DAY Money Back Guarantee

Capacity	Model	Part No.	Internal	Part No.	External
2200MB	Capella 8.5ms	C104 0003	$629	C104 0053	$689
2150MB	Atlas 8ms	C104 0004	$699	C104 0054	$759
4300MB	Atlas 8ms	C104 0005	$969	C104 0055	$1029

C104 0301

$1199

Seagate

BARRACUDA 4

8.5ms average seek time

7,200 RPM

4.3GB

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5 YEAR Warranty

3.5" HALF HEIGHT & LOW PROFILE (LP)

Formatted Capacity	Model	Part No.	Internal	Part No.	External
1.0GB	Medalist 51080N	C104 0302	$269	C104 0352	$329
2.1GB	Hawk 2 32430N	C104 0303	$689	C104 0353	$749
2.5GB	Barracuda 2LP 32550N	C104 0300	$769	C104 0350	$829
4.3GB	Barracuda 4 15150N	C104 0301	$1199	C104 0351	$1259

5.25" FULL HEIGHT

9.1GB	Elite-9 410800N	C104 0305	$2099	C104 0355	$2199

CLUBMAC FAST AND WIDE DRIVES

Quantum

2200MB	Capella VP32210SW	C104 0100	$699	C104 0150	$799
4300MB	Atlas XP34300SW	C104 0103	$1029	C104 0151	$1129

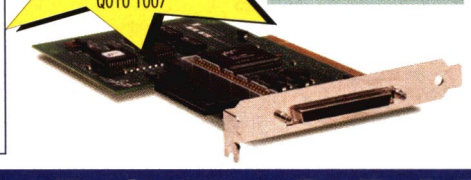
Seagate

2.1GB	Barracuda 2LP ST32150W	C104 0400	$849	C104 0450	$949
4.3GB	Barracuda 4 ST15150W	C104 0401	$1279	C104 0451	$1379
9.1GB	ELITE 9 ST410800W	C104 0402	$2269	C104 0351	$2389

qlogic Corp.

$229

Q010 1007



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F094 1002 SCSI JackHammer NuBus $459

CLUBMAC CD-ROM DRIVES

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C104 1500

ClubMac® 4X

Features:
600KB/sec data transfer
190ms avg access time
Caddy-less design

1 Year Manufacturer's Warranty

Backed by ClubMac's 30 DAY Money Back Guarantee

C104 1500 **ClubMac QUAD-Speed CD-ROM Drive** $179

ClubMac®

		Access time	Trans Rate	
C104 1600	ClubMac Six-Speed CD-ROM Drive	140ms	900k/sec	$299
C104 1500	ClubMac Quad-Speed CD-ROM Drive	140ms	600k/sec	$179
C104 1400	ClubMac Classic 2X CD-ROM Drive	250ms	300k/sec	$99

NEC

		Access time	Trans Rate	
N024 1062	MultiSpin 6Xe CD-ROM Reader	150ms	900k/sec	$479
N024 1070	MultiSpin 4Xc 7 Disc Changer	350ms	600k/sec	$339
N024 1011	MultiSpin 3Xp plus Portable CD-ROM	240ms	500k/sec	$349

NEC

$339

N024 1070

MultiSpin 4Xc 7 Disc Changer

Load 7 Discs at a time!

1 Year Manufacturer's Warranty

4X

N024 1070 **NEC MultiSpin 4Xc 7 Disc Changer** $339

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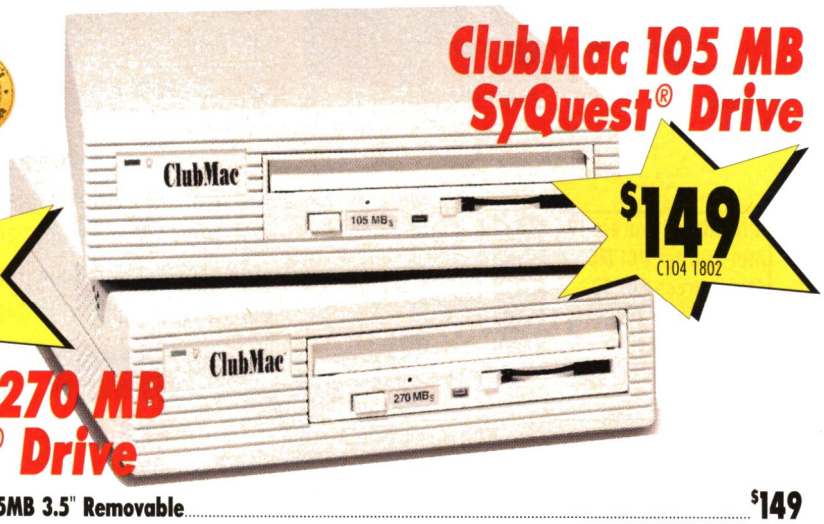
ClubMac 200 MB SyQuest® Drive

C104 1801 **ClubMac 200MB 5.25" Removable** $329

ClubMac 105 MB SyQuest® Drive



ClubMac 270 MB SyQuest® Drive

C104 1803 **ClubMac 105MB 3.5" Removable** $149

C104 1802 **ClubMac 270MB 3.5" Removable** $329

SyQuest® EZ135 Drive

S198 2001 **SyQuest EZ135 135MB 3.5" Removable** $199

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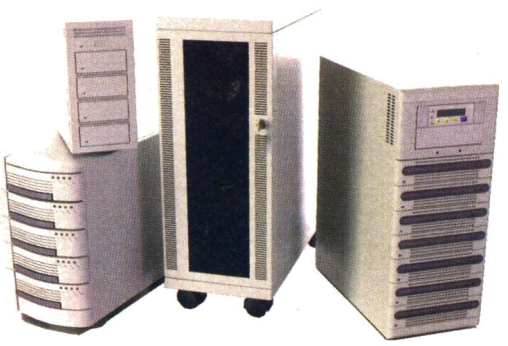

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4MB 70NS	149

72-pin SIMMs

4MB 70/60NS	$72/74
8MB 70/60NS	145/147
16MB 70/60NS	299/301
32MB 60NS	596

72-pin, 36 bit PC SIMMS

4MB 70NS/60NS EDO	$80/75
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16MB 70NS/60NS EDO	335/349
32MB 70NS/60NS EDO	979/636

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32MB70NS	1219

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8MB 70NS	349
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64MB 60NS	1125

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What type of Memory do I need?

Standard 30-Pin Simms:
Plus, SE, SE 30, Classic, Classic II, Color Classic, LC, LCII, Performa 200, Performa 400-430, Performa 600, Quadra 900/950, Mac II, IIx, IIcx, IIsi, IIci, IIfx, IIvx, IIvi.

Standard 72-Pin Simms:
Quadra 605/630, 610, 650, 700, 800/840AV, LCIII, LC475, LC630, Performa 450-560, 575 and 6115CD, PowerMac 6100, 7100, 8100, WS 80, WS60, WS 95, WS 6150 and WS 8150, 9150.

168 Pin Dimms:
PowerMac 9500, 8500, 7500, 7200

PowerMac Memory Selection Guide

PowerMac 6100

(8MB) Standard 72-pin SIMMS

To upgrade your RAM to:	You need to order:
16MB	(2) 4MB 70/60NS
24MB	(2) 8MB 70/60NS
40MB	(2) 16MB 70/60NS
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PowerMac 7100, 8100

(8MB) Standard 72-pin SIMMS

To upgrade your RAM to:	You need to order:
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24MB	(2) 8MB 70/60NS
40MB	(2) 16MB 70/60NS
72MB	(2) 32MB 60NS
136MB	(4) 32MB 60NS
264MB *(7100 only)*	(8) 32MB 60NS

PowerMac 9500, 8500, 7500

(16MB) Standard 168-pin DIMMS

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48MB	(2) 16MB 70NS DIMMS
80MB	(2) 32MB 70NS DIMMS
144MB	(2) 64MB 70NS DIMMS

PowerMac 7200

(8MB) Standard 168-pin DIMMS

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64MB	(2) 16MB 70NS DIMMS
128MB	(4) 32MB 70NS DIMMS
256MB	(4) 64MB 70NS DIMMS

FPUs/CoProcessors Video RAM

FPU's/Math CoProcessors

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FPU LCIII 25 MHZ	49
FPU LC/LCII 16 MHZ	49
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256K 80NS Video RAM	$17
512K Video RAM	22
1MB Video RAM PM72/75/8500	55
2MB Video RAM PM 9500	225
256K/512K Cache Card	72/282
1MB Cache Card	792
256K Cache Dimm PMPCI256	109
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MODEMS

GLOBAL VILLAGE

Teleport Platinum 28.8 V.34	$205
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Turbo 601 100 MHZ w/adapter	1175
PowerCard 601 100MHZ	959

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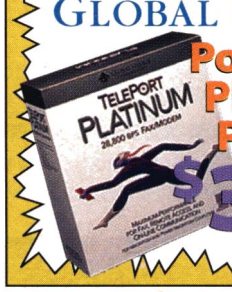

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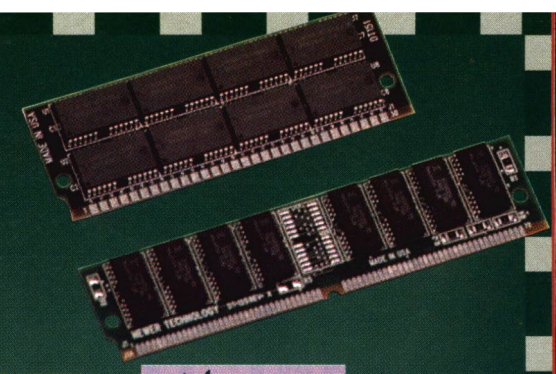

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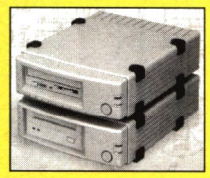

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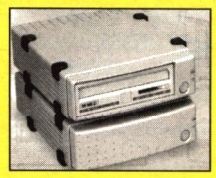

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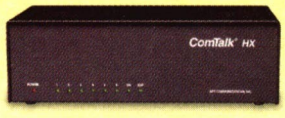

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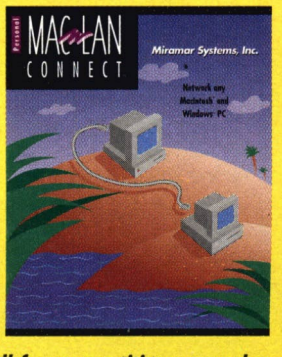

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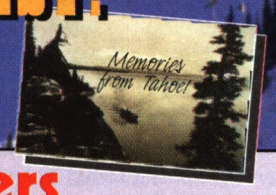

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16MB 60/70NS	256
32MB 60/70NS	525

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4MB 80/70NS	150
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16MB 70NS	650

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4MB 80/70NS	139

STANDARD 30-pin SIMMs

1MB 100NS	24
1MB 70NS	24
2MB 70/80NS	57
4MB 70NS	76
8MB 70NS	218
16MB 70NS	385

PowerMac 6100,7100,8100 CACHE

256K	140
512K	229

Mac VRAM

256K	17
512K	28

PowerMac 7200,7500,8500,9500 CACHE

256K	90
512K	136

PowerMac 7200,7500,8500,VRAM & 9500

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2MEG 9500	159

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16MB 70NS	365
32MB 70NS	730

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Laserwriter IIF, IIG	4MB Kit	TP4MM IICI	109
	16MB Kit	TP16MMIICI	495
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Laserwriter16/1600PS	4 MB	TP1M3270	105
	8MB	TP2M3270	208
	16MB	TP4M3260L	425
Laserwriter Pro 600, 630	4MB	TP1M3270	105
	16MB	TP4M3260L	425
Laserwriter Pro 810	4MB	TPA-LW810/4	167
	8MB	TPA-LW810/8	299
Laserwriter Select 300	1MB	TP1M8270	29
	4MB	TP4M8870	115
Laserwriter Select 310	1MB	NA	37
	4MB	NA	105
Laserwriter Select 320	2MB	NA	102
	4MB	NA	187
	6MB	NA	260
Laserwriter Select 360	16MB	TP16MSEL360	422

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	2MB	85			
	4MB	165			
	8MB	325			
DesignJet 600,650C	4MB	139			
	8MB	299			
	16MB	550			
DesignJet 200,220,	1MB	45			
LaserJet 4, 4M4SI, 4SIMX,	2MB	85			
DeskJet 1200C,	4MB	165			
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LaserJet 4V, 4MV	2MB	85			
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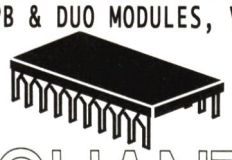

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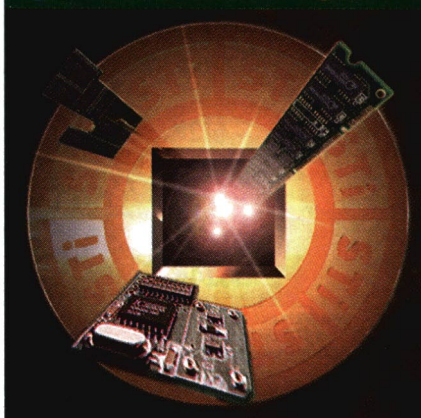

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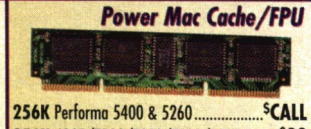

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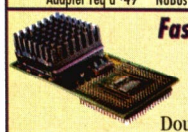

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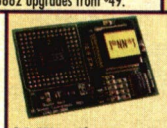

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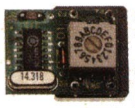

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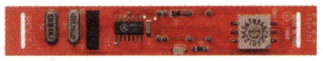

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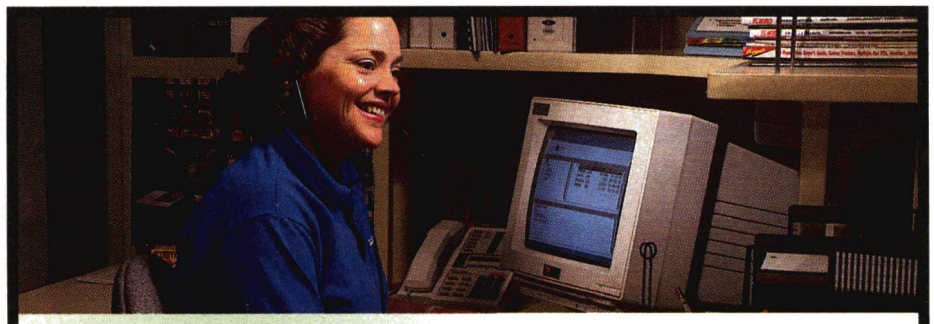

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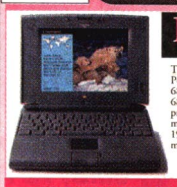

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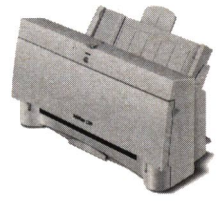

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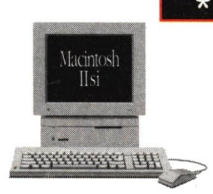

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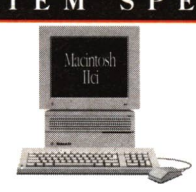

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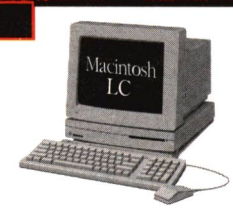

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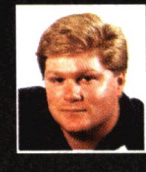

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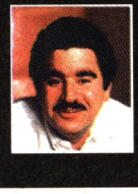

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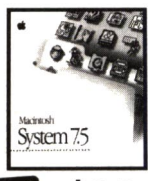

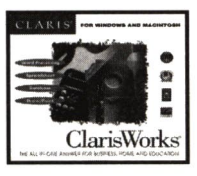

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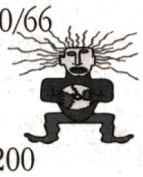

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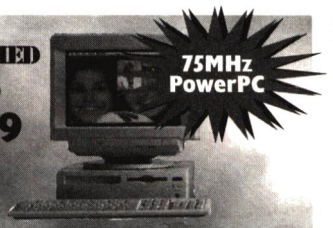

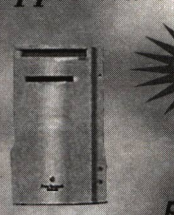

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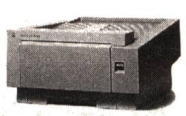

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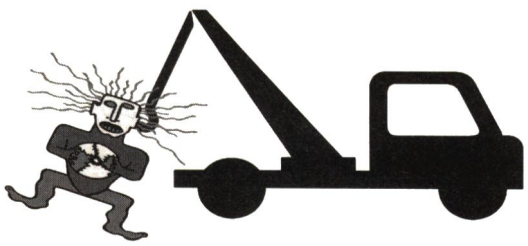

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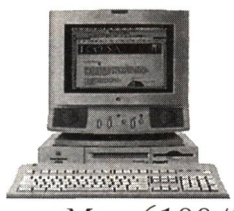

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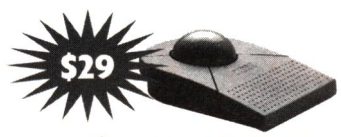

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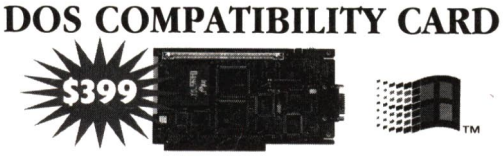

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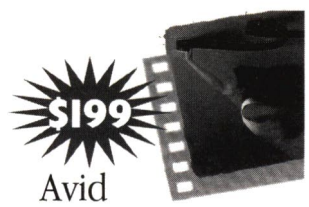

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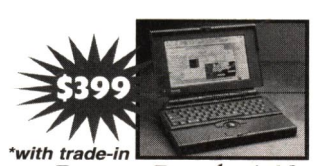

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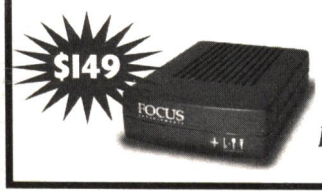

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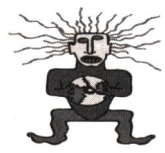

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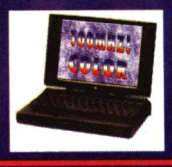

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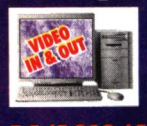

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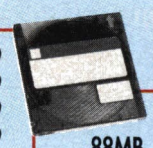

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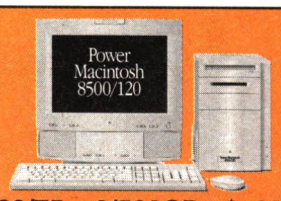

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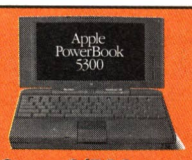

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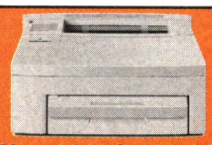

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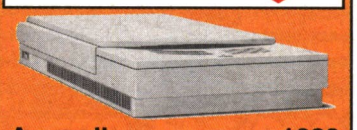

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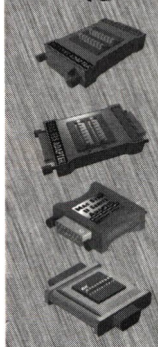

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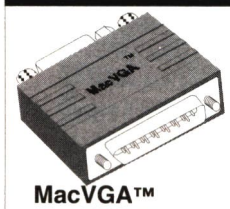

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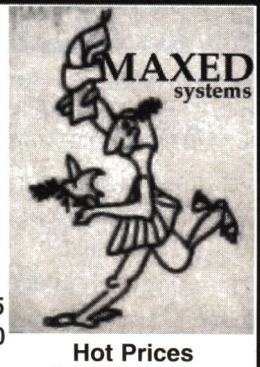

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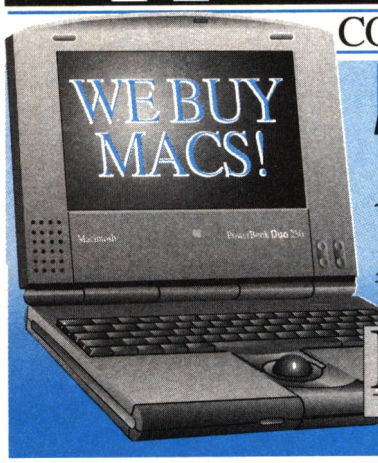

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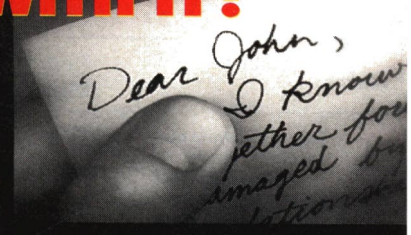

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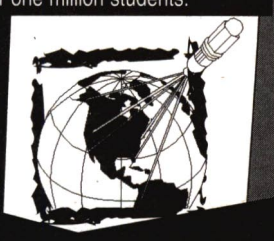

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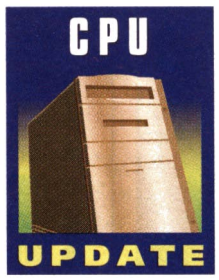
Speed *From Page 1*



Overall value:

- 9500/150 ◆◆◆
- 8500/150 ◆◆◆
- 8500/132 ◆◆◆
- 7600/120 ◆◆◆◆
- 7200/120 ◆◆◆◆

nearly 50 percent in processor performance (see benchmarks below) and an even larger improvement in graphics relative to the 7200/90.

With a soldered-on processor (instead of the replaceable CPU daughtercards used in higher-end PCI models), a single non-Fast SCSI bus and no built-in digital video capabilities, the 7200 remains the least flexible of the PCI Power Macs. But the new version boosts performance to about the level of the Power Mac 7500/100 — a level that should be respectable for several years to come. (The 7200/120 doesn't quite match the 7500/100, despite a faster processor, mainly because the lower-end machine lacks support for memory interleaving.)

Replacing the 7500/100 in the middle of the PCI Mac family will be the new Power Mac 7600/120, which rates a new model name, according to Apple, because it incorporates a different processor, the PowerPC 604. The chip change, together with the addition of a 256-Kbyte cache DIMM (dual in-line memory module), lifts processor performance by 39 percent, to levels previously available only from Apple's much more expensive 8500 and 9500 machines.

The improvement is even greater with applications tuned to take full advantage of the PowerPC 604's dual-integer pipeline architecture, notably Adobe Photoshop. The 7600 needed only 1 minute, 58 seconds to complete an RGB-to-CMYK conversion that took more than 4 minutes on a 7500/100; applying an unsharp mask required only 2:58 on the 7600, compared with 5:54 on the 7500.

Performance improvements are more modest in the case of the Power Mac 8500 and 9500, which already had 604 processors. The 8500, previously available only with a 120-MHz version of the chip, will now be offered in both 132- and 150-MHz configurations; conversely, the 9500, introduced last June with 120- and 132-MHz options, will now be available only with a 150-MHz processor. (We asked Apple whether this shuffle was indicative of how the company plans to carry out new CEO Gilbert Amelio's often-expressed desire to see the company's product line streamlined; we were told that the new lineup was planned before Amelio's appointment.)

ATI Technologies Inc.'s XClaim GA display card is now standard equipment on the 9500.

The 150-MHz maximum speed for the two Apple minitowers doesn't break any records — Power Computing Corp. has been shipping the PowerWave 150, a 150-MHz clone, since last fall. But the extra speed will no doubt bolster the Apple systems' position as premier tools for graphics, publishing and multimedia. (We were not allowed enough hands-on time with the new models to test the effect of faster processors on the 8500's digital video capabilities.)

Unfortunately, the new 8500 and 9500 retain the awkward internal design of their predecessors. Improvements on that score, as well as logic boards that allow CPU bus speeds above 50 MHz, are not expected from Apple until PowerPC Platform systems begin to appear at the end of this year.

"Expected U.S. Apple prices" for the new models range from $1,900 for a 7200/120 with 8 Mbytes of RAM, a 1.2-Gbyte hard disk, a quadruple-speed CD-ROM drive and no cache to $4,800 for a 9500/150 in a 16/2-Gbyte/CD configuration. Overall, these prices are no lower than those Apple set last summer for the original PCI Macs; in fact, the 7600, at $2,999 for a 16/1.2-Gbyte/CD configuration, starts at a slightly higher price than the 7500 did.

Perhaps these new prices are the first manifestation of Apple's efforts to boost sagging margins. This is not the place to evaluate that strategy in general, but in this case we have some doubts: At a time when Dell Computer Corp. is offering 166-MHz Pentium systems — with 16 Mbytes of RAM, a 2-Gbyte hard drive, sextuple-speed CD-ROM drive, 15-inch monitor, keyboard and Microsoft Office Professional for Windows 95 — for $2,579, we wonder whether the new systems' less-than-aggressive pricing won't further undermine Apple's already eroding position in business market. □

Apple bumps up its CPU line

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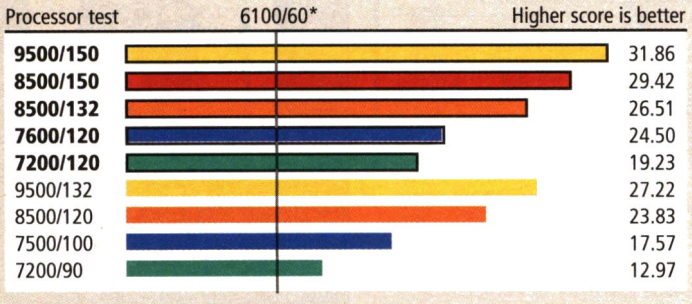
8500/132	132-MHz 604	16/1.2GB/CD/256K L2 cache	$3,900
7600/120	120-MHz 604	16/1.2GB/CD/256K L2 cache	$3,000
7200/120	120-MHz 601	16/1.2GB/CD/256K L2 cache	$2,300
7200/120	120-MHz 601	8/1.2GB/CD	$1,900
7200/120 PC Compatible	120-MHz 601 100-MHz Pentium	8/8*/1.2GB/CD/ 256K L2 cache	$2,800
7200/120 PC Compatible	120-MHz 601 100-MHz 5x86	8/8*/1.2GB/CD/ 256K L2 cache	$2,600

**8 Mbytes of RAM each are allocated for the Mac and the DOS card. Source: Apple.*

Apple's new Power Mac lineup

By boosting clock speeds, adding Level 2 caches and replacing the PowerPC 601 with a 604 in its midrange model, Apple has given its entire business Power Mac line a significant performance boost.

Power Mac-native CPU speed



Test configurations: All tests on the new Macs were run using System 7.5.3 with only standard extensions loaded, virtual memory off and Modern Memory Manager on. The older Macs were tested on System 7.5.2 with the same setup. Displays were set to eight-bit color at a resolution of 640 by 480 pixels. The 9500/150 came with an ATI XClaim GA graphics card. All machines had 16 Mbytes of RAM, except the 8500/132, which had 32 Mbytes. The 9500/150 and 9500/132 had a 512-Kbyte Level 2 cache. The other models had a 256-Kbyte Level 2 cache, except for the older 7500/100 and 7200/90, which had no cache.

*MacBench's score compares speed to a Power Mac 6100/60, which receives a 10.

For additional benchmarks scoring the new Power Macs' performance in graphics, publishing, floating-point operations and disk use, see MacWEEK's Web site at http://www.zdnet.com/macweek/reviews.html.

WWDC *From Page 1*

comfortable," said Joe Kissel, Nisus product manager at Nisus Software Inc. of Solano Beach, Calif. "Is Apple going to do with OpenDoc what it's done with [its] technologies in the past?"

Kissel said several of Apple's efforts have arrived unfinished. "It's like they're trying to test the waters and will decide later if they are going to support them," Kissel said. "I just got the API for PowerTalk."

Other developers pointed to Apple's difficulty in bringing tools and products to market. "If there are long, significant delays in technologies, developers lose faith in them," said Brian Lawley, director of C++ and Java tools at Symantec Corp. of Cupertino, Calif.

Lawley said when Apple follows through with its plans, developers jump in wholeheartedly. "QuickTime was delivered on time, and within a few months they made larger frame sizes available," he said. "Rapid upgrading is definitely a factor [for success]."

In addition to speedy delivery, Apple must move new technologies more quickly into the OS, said Gary Gonzalez, president of Binary Software Inc. of Santa Monica, Calif. "QuickDraw GX will be 2 years old before it goes into the system software. It's useless," he said.

Developers said they have this same fear about QuickDraw 3D and OpenDoc. "If I were Apple, I'd be totally focused on integrating OpenDoc into the Mac OS," said David Smith, CEO of Cary, N.C.-based Virtus Corp.

Apple and Claris Corp. have also had a lackluster record in implementing new technologies.

"You never see a Microsoft product ship without OLE support," Symantec's Lawley said. Resolving this issue is most critical, he said, "because if Apple won't bet on its own technologies, then no third party is going to."

Some longtime Mac programmers said some Apple efforts seem to be little more than technological exercises without a clear market.

"It comes down to 'What problem does this [technology] solve?'" Smith said. He gave PlainTalk's speech recognition as an example: "When it's barely accurate enough to recognize single words, you have to ask yourself, 'Why spend a huge effort to integrate it into my application?'"

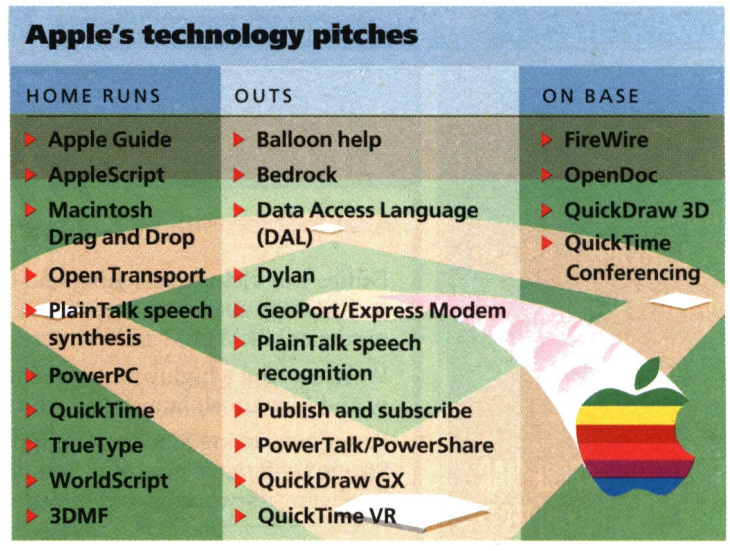
While many developers said Apple's current technologies solved real problems, they were more concerned that Apple hadn't learned from its past mistakes of keeping technologies proprietary.

Developers agreed Apple's technologies need to be cross-platform.

Shotton added that for QuickDraw 3D and QuickTime Conferencing to succeed, Apple should publish them as open standards.

Virtus' Smith agreed about QuickDraw 3D: "They make it an open standard or it ceases to exist. There's just no choice." □

Apple's technology pitches



NAB

From Page 1

cards, a breakout box that converts input to D1 video and digital audio.

It will feature a real-time preview capability, component video inputs, rescaling and data transfer rates of up to 40 Mbps.

Bundled software will offer real-time previews and full IPB (Intracoded, Predictive, Bi-directional) frame control. The system will also feature frame-accurate videotape recorder control and batch processing as well as off-line QuickTime encoding, 3DO said.

3DO also announced MPEGXpress 1250, a PCI-based MPEG-1 system available now for $11,995 , the same price as the company's NuBus MPEG-1 solution, MPEGXpress 1000 (see 01.15.96, Page 62).

▸ **Radius Inc.** announced a new version of its video-editing software. Radius Edit 2.0, due in the second quarter, will ship with a PCI version of VideoVision, Radius' nonlinear video-editing board. The software will support unlimited layering of audio and video as well as alpha channels, audio "rubber band" controls, and faster editing, the company said. In addition, it will offer a variety of special-effects filters, including chroma and luma keying and Pan Zoom Rotate. It will feature an enhanced version of the 3-D animation filter included in Radius' VideoFusion software, Radius said.

▸ **Avid Technology Inc.** demonstrated Elastic Reality 3.0, a Power Mac-native version of its warping, morphing, compositing and animating software formerly known as Beyond Reality. Pricing for Version 3.0, which is due in the third quarter, has not been set.

The upgrade will feature hierarchical, path-based animation; 3-D shape manipulation; unlimited user mattes with Boolean operations among them; and the capability to match scenes between live-action shots.

Avid also announced Version 2.0 of its Open Media Framework Interchange Toolkit. The free software library, available now, lets developers exchange data between video applications. OMF 2.0 also features a plug-in architecture and supports edited video sequences.

▸ **Xaos Tools Inc.** rolled out a new version of its Terrazzo plug-in for Adobe Photoshop and compatible applications. Version 2.0 of the $199 software, which creates tiled patterns on Photoshop images, is slated to ship in May. It has been optimized for Power Macs and features single-pixel nudging capabilities that increase its precision. The upgrade will include a stand-alone version of Terrazzo and TubeTime, a free plug-in that applies television-interference effects to Photoshop and Adobe Premiere files.

▸ **Ultimatte Corp.** took the wraps off an After Effects-compatible upgrade to Ultimatte for Mac, its Premiere plug-in transition software for image compositing. Like the current Premiere-only version, the free upgrade to the $1,495 package, due in the second quarter, includes a filter for eliminating grain noise in composites as well as a screen-correction feature for blue screens.

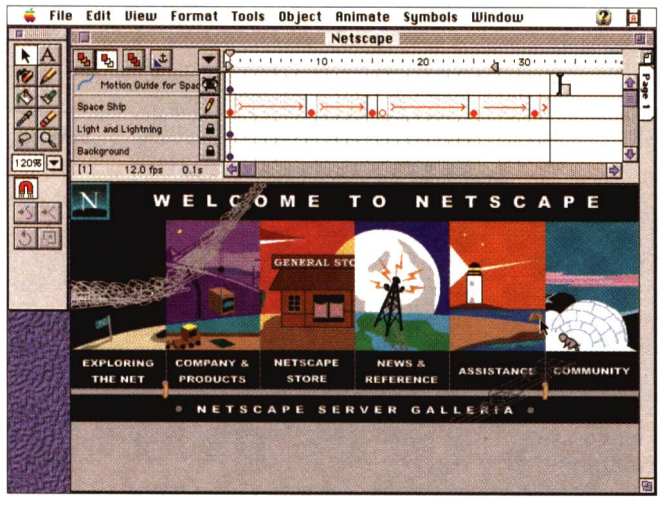
▸ **Apple and The Associated Press** announced a joint effort to develop Mac-based systems for organizing broadcast news programs from the desktop. Apple said the first systems are being beta tested by the British Broadcasting Corp. □

CelAnimator livens up Web with vector-based graphics

By Rebecca Gulick

Putting its moves on the Web, FutureWave Software Inc. last week released a free beta version of its new 2-D animation tool for the Internet.

CelAnimator, previously called SmartSketch Animator and based on the company's SmartSketch vector-based drawing program, will be priced at $250 when it ships in June. The program lets users create anti-aliased animated drawings and buttons that are small enough for efficient use on the Web. FutureWave said vectors keep files small and let animations be scaled to any size and played back at any color depth.



This Netscape Navigator image map, originally 19 Kbytes, shrunk to 12 Kbytes after each block was animated using FutureWave's CelAnimator.

Clients will need FutureSplash, a free Netscape Navigator 2.0 plug-in from FutureWave, to view the files. The plug-in supports streaming, so users will be able to view animations as they are downloaded. Through a Command-key combination users will be able to zoom images without loss of quality, the company said.

All text in CelAnimator graphics is converted into font outlines so the letters can be scaled without distortion or jagged edges.

Jeff Veen, interface director for San Francisco-based HotWired Ventures LLC, said the Web has been in need of a 2-D animation tool like this. "We like FutureSplash for simple animation and image maps better than [Macromedia Inc.'s] ShockWave," he said. Veen credits CelAnimator's use of vectors because they are less resource-intensive. "These files are so incredibly small," he said.

CelAnimator imports Macromedia FreeHand, Adobe Illustrator and DXF (Drawing Interchange File) files and PICT sequences, and exports QuickTime and Animated GIF formats.

The beta version of CelAnimator can be downloaded from http://www.futurewave.com.

FutureWave Software Inc. of San Diego can be reached at (619) 552-7680 or (800) 619-6193; fax (619) 552-7689; info@futurewave.com. □

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Apple

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during a post-results conference call, Apple officials said the losses will continue, though they hope to return the company to profitability within 12 months. Stopping short of specific predictions, Anderson said, "We do believe that revenues have bottomed out" and that Apple expects future quarterly losses to decline over the coming year.

The restructuring plan hatched in Cupertino aims to achieve a break-even point of about $9 billion in annual revenue, down from $11.1 billion for fiscal 1995. To reach this financial balance, Apple said it would eliminate an additional 1,500 jobs. When combined with the 1,300 layoffs announced in January and the 1,100 workers who will switch employers with the sale of the Fountain, Colo., Apple factory (see 04.08.96, Page 72), the new cuts will reduce the company's total work force by 25 percent over the coming year.

"I want to stress, however, that this activity is not about body count," Amelio said. "What it's about is reducing the break-even [point], and we'll pull any and every lever we need to to get that break-even down to where it needs to be."

Eric Lewis, an analyst with International Data Corp. of Framingham, Mass., said Apple is "getting the worst behind them, but there's more bad news to come. They still have a rather high level of inventory."

Apple reported its inventory at $1.5 billion, compared with $1.78 billion in the second quarter last year. The company's cash on hand shrank to $592 million, a dramatic drop from $952 million a year ago and $1.1 billion as recently as the end of the first quarter.

"Better to take the medicine now and get it over with," said Amy Wohl, principal in Wohl Associates of Narberth, Pa. "But just cutting back on expenses isn't going to do the trick."

Sketching the outline of his recovery plan, Amelio said he'll position the company "to take advantage of the architecture of the Internet so as to have platform-independent computing." He said he'd detail the company's strategy next month at the Apple Worldwide Developers Conference in San Jose, Calif., which roughly coincides with the end of his first 100 days at Apple's helm.

Amelio returned to the Internet theme repeatedly, saying Apple had a "leadership position in authoring and access on the Internet," pointing to Newton and Pippin as strong Apple technologies that could be positioned as future Internet platforms.

"As you look to the future, to an Internet-based computing model, what you quickly realize is that the role of the client-based operating system becomes much less important," he said. The Internet represents "a leveling of the playing field," in the larger convergence of communications, computers, multimedia and consumer markets.

Michael Murphy, editor of the California Technology Stock Letter in Half Moon Bay, Calif., said he thought Amelio's focus was sharp. "[He's] saying they will be an Internet-centric company. Now that's a vision that people can buy into," Murphy said.

Kimball Brown, vice president of PC Systems at Dataquest Inc. in San Jose, was also upbeat about Amelio's performance. "Essentially [he's] trying to throw all the negative stuff at this quarter. The sooner they can get a positive quarter, the sooner the stock will go up. I have no doubt that in three or four quarters he's going to turn it around."

Despite Amelio's optimism that Apple has bottomed out, his plans have skeptics. Bill Gurley, analyst at CS First Boston Corp. of New York, said he was "quite disappointed. I didn't see any of them say anything of substantial difference than what previous management has said," he said.

"When such a large company has such negative momentum, radical is the only way to go. I don't see anything radical." □

Monica Campbell and Joanna Pearlstein contributed to this report.

HP primes new inkjet for education market

By David Morgenstern

Hewlett-Packard Co. this week will introduce a new entry-level inkjet printer — for Windows users. Macintosh users will have to wait until July for a serial and LocalTalk version.

The forthcoming $309 DeskWriter 680C will replace the 660C model, introduced last year. Offering similar features as the previous printer, it will output black-and-white pages at 600 dpi and color prints at 600 by 300 dpi.

Aimed at educational markets and home users, the DeskWriter 680C will feature banner printing on continuous sheets of paper, a capability previously found only on older impact printers. The inkjet banners can span up to 220 inches, HP said. A switch on the printer changes the position of the print head and adjusts the input rollers to accommodate the continuous paper roll.

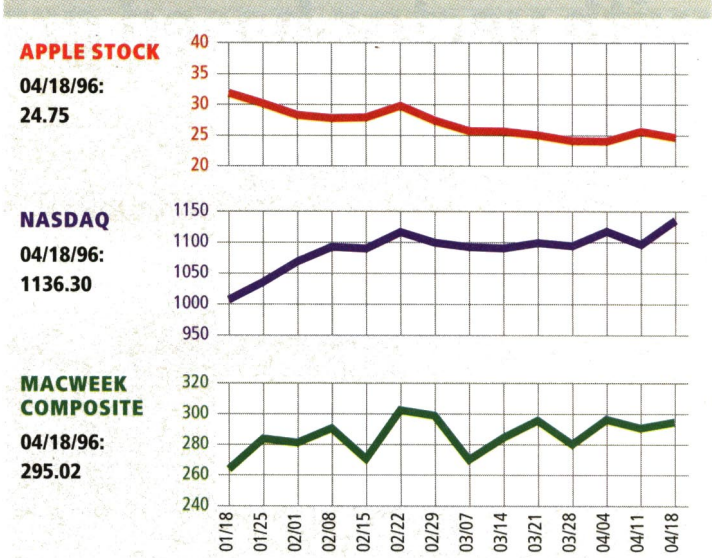
With its Econofast print mode, the new DeskWriter will bump up monochrome speeds from 4 pages per minute to 5 ppm; it will drop to 1.5 ppm for color. HP said the Best mode will have speeds of 1 and 0.3 ppm for black-and-white and color, respectively. The 680C will use the same black and CMY ink cartridges as the DeskWriter 660C.

HP said it will not provide a QuickDraw GX driver for the 680C; it will come with a standard QuickDraw driver.

Analysts said they expect other inkjet vendors to follow HP's lead in banner printing.

Hewlett-Packard Co. of Palo Alto, Calif., can be reached at (800) 752-0900; http://www.hp.com. □

StockWatch



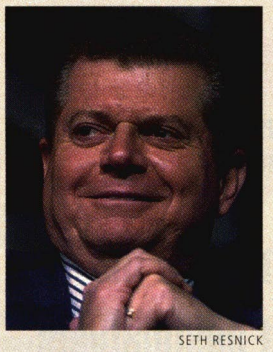
	04.18.96 CLOSE	WEEKLY CHANGE
Apple	24.75	-1.00
MacWEEK Composite*	295.02	4.01
SOFTWARE DEVELOPERS		
Adobe	35.88	3.13
Caere	9.81	0.44
CE Software	2.56	0.25
Fractal	12.00	-0.25
Graphsoft	6.25	-0.38
Insignia	6.00	0.38
Intuit	47.50	1.25
Macromedia	37.63	-4.50
Microsoft	109.00	7.88
Novell	13.00	-0.13
Oracle	31.75	2.50
Symantec	14.38	1.38
STORAGE		
Conner	25.75	0.00
Iomega	34.25	2.31
Pinnacle	8.25	0.38
Quantum	18.75	0.00
Seagate	57.50	-1.25
SyQuest	5.88	-0.13

	04.18.96 CLOSE	WEEKLY CHANGE
PERIPHERALS VENDORS		
AmeriQuest	0.81	-0.06
Asanté	5.50	-0.19
Focus	2.00	-0.25
Global Village	14.50	-0.25
HP	100.00	3.63
QMS	5.63	0.25
Radius	2.38	-0.13
Shiva	98.50	3.00
Tektronix	35.13	2.25
Truevision	7.13	-0.88
DISTRIBUTORS		
CompUSA	59.75	2.50
IE	6.25	-0.13
Merisel	2.63	0.00
Tech Data	18.00	0.50
INDUSTRY INDICATORS		
Compaq	41.00	1.38
IBM	105.63	-11.88
Intel	65.75	5.31
Motorola	60.00	4.50
SGI	25.38	0.75
NASDAQ	1136.30	39.16

**The MacWEEK Composite is calculated by adding the stock prices of the following companies: Apple, Adobe, Asanté, Caere, CE Software, Global Village, Intuit, Macromedia, Radius, Shiva, SyQuest and Truevision. Source: Nordby International Inc.*

Amelio addresses Apple highs, lows

While Apple CEO Gilbert Amelio wouldn't talk about the company's product strategy or plans for Copland during last week's conference call with the press, he was quite chatty about a variety of other topics:



SETH RESNICK

Apple Chairman and CEO Gilbert Amelio talks the talk.

- On the policies of his predecessors: "Apple has been on a market-share/price-driven strategy that frankly hasn't worked. The presumption was that the market was more elastic than has proven to be the case."
- "The report card we're getting from the consumers is that there's not enough value built into our products to warrant the higher margins. There are some products that are very good, and there are some that are really quite bad."
- "I think we've allowed ourselves in some instances to focus too much on the product and not enough on customers, in the sense of getting technically enamored with some of the features. But not all of those features always transfer into perceived customer value."
- Regarding the MagLite analogy (see 04.08.96, Page 1): "It was not meant to suggest that I was going for premium pricing. ... What it meant was simply and clearly a lecture on quality and customer value."
- On Apple's brain drain: "The employees I've met are ... looking for leadership. They're looking for decisive action. They're ready to fall in line behind some clear leadership. I think that will go a long way to help alleviate this problem."
- On competition: "We're going to move to where operating systems are simply not the end-all of what competition is all about, [the race will be] the ability to provide a robust Internet-based architecture with a really great user experience. And that's the sort of thing we're focusing on."
- On the rollout of his long-term strategy at May's WWDC: "I'm planning to give the primary speech at the developers conference, so that will be sort of the official launch of the strategy we intend to pursue. Clearly it's not just a one-time event; we will be talking about it before and after [the event]. Strategy is one of those things that you do on an ongoing basis." — *By Rick LePage*

Directions

From Page 1

come together as an industry within the industry, we will get crushed."

In addition to FireWire, Apple told conference attendees that it was looking at several new interfaces, including Fibre Channel and Serial Storage Architecture.

Dan Monahan, an Apple product manager for desktop systems, said the company would release a 200-MHz, PowerPC 604e-based machine in early 1997; a 300-MHz 604e-based machine is planned for early 1998. Apple displayed a drawing of a Mac incorporating several interfaces, including SCSI, parallel, serial, LocalTalk, ADB and Intel-standard PC keyboard and mouse ports.

Apple also showed off the forthcoming QuickTime 2.5, which will feature speed enhancements and improved synchronization of audio and video data. The company said future QuickTime directions include improved integration with QuickDraw 3D.

Elsewhere in the video realm, Macromedia Inc. CEO Bud Colligan treated NAB Multimedia World subconference attendees to a brief glimpse of the San Francisco-based company's forthcoming video program, code-named Key Grip, reportedly due to ship early in 1997.

The pre-release software appeared to have a spare, uncluttered interface. A Portfolio palette will let users choose video clips and transition effects, which can be applied in real time to Key Grip's dual-streaming video. Colligan offered no details on pricing or specific ship dates for the product.

Despite the Mac's high profile, Windows made some clear inroads at this year's NAB show. Many vendors showed off the first Windows 95 versions of their software, with Windows NT waiting in the wings.

"If you're not on the Intel platform, you're not in the future," said Jeff Edson, vice president of digital media at Huntsville, Ala.-based Intergraph Computer Systems, a maker of video workstations.

Still, in Apple's key digital video and multimedia markets, the Mac OS holds advantages for many developers. "Microsoft [Corp.] and Intel [Corp.] are still behind," said Tony Dolph, director of marketing at Data Translation's multimedia group. "But Apple can't assume they'll be dumb forever." □

Joanna Pearlstein and Matthew Rothenberg contributed to this report.

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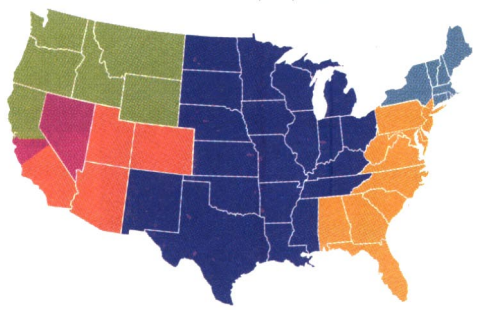

[1] Includes New Brunswick, Newfoundland, Prince Edward Island, Quebec, Manitoba and Ontario, Canada

[2] Includes Northern California north of San Mateo; Alaska; and Alberta and British Columbia, Canada

[3] Includes San Francisco Bay Area south of the San Mateo Bridge to San Luis Obispo

[4] Includes Southern California south of San Luis Obispo, Arizona, Utah and Colorado

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You've read the Deck II 2.5 review, now listen to it. Log into MacWEEK Online and hear the results of an actual recording session using Deck II software featured in this week's review. Senior Reviews Editor Missy Roback provides us with a musical interlude in RealAudio format. On the Web: http://www.zdnet.com/macweek/mw_1016/rev_deck.html. A compressed version to download can be found in the MacWEEK Forum on CompuServe (go zmc:macweek).

Gil's moves predicted

Apple's Gilbert Amelio has hinted at his plans for restructuring Apple, but the industry has some ideas of its own. In a special "Off the Record," Mark Hall takes the measure of conventional wisdom on which way Apple should move. http://www.zdnet.com/macweek/mw_1016/opinion_otr.html

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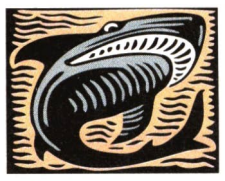


Shacking up with Metrowerks

Now that the Knife feels safe in opening misshapen, oil-stained packages once again, thanks to the good offices of the Federal Bureau of Investigation, he has been uncovering a veritable treasure trove of hitherto neglected nuggets.

Besides his Aunt Selma's Hanukkah fruitcake, the Knife has been chewing on new rumors about Java's incursion into the Mac badlands. According to the Knife's own Bureau of Alcohol, Tobacco and FireWire, the Mac port of the Sun Überlanguage has Metrowerks' fingerprints all over it.

A quick trip to the forensics lab reveals that Metrowerks will be handing over an arsenal of home-brewed Java tools as well as Version 9.0 of CodeWarrior at WWDC in May. Among the suspicious devices shacking up in the development suite will be a source-level debugger for Java.

Ironic jingoistic footnote: If rumors of Metrowerks' involvement are true, that means that Café, all-American archrival Symantec's brand-new Java development environment, owes a significant debt to the Canadian expatriates at Metrowerks.

Scent of the Internet

Symantec isn't the only company making overtures to Web spinners this week. While Gil Amelio was putting the best face on Apple's humongous loss with promises of new offensives on the cyberspace front, the trolls in the company's machine shop were hard at work jury-rigging some volatile little software packages of their own. Though the new projects seemed safely under wraps, the Knife (who worked his way through college as a drug-detection dog) has succeeded in sniffing out the truth.

According to the Knife's highly trained nostrils, Apple is busy stockpiling OpenDoc parts, including one that plays Netscape Navigator plug-ins. Meanwhile, pheromones wafting from Cupertino indicate that the company is also brewing server add-ons that will transform AppleShare from a humble, huggable file-sharing technology into a zippy FTP server.

Live Mac or die

But back to the International Canadian Conspiracy: Reports emanating from the Mac freemen of Utah's WordPerfect operation say the rustic word processor developer is financially armed to the teeth in the wake of its recent purchase by those acquisitive Canadian nationalists at Corel.

According to an on-line missive from Ken Freeman, WordPerfect's aptly named Mac product marketing manager, Corel will ship a free update to WordPerfect 3.5 in the next few weeks; the company is also planning a Mac version of Corel's Print House, a layout package for letterhead and greeting cards. Double-schwing!

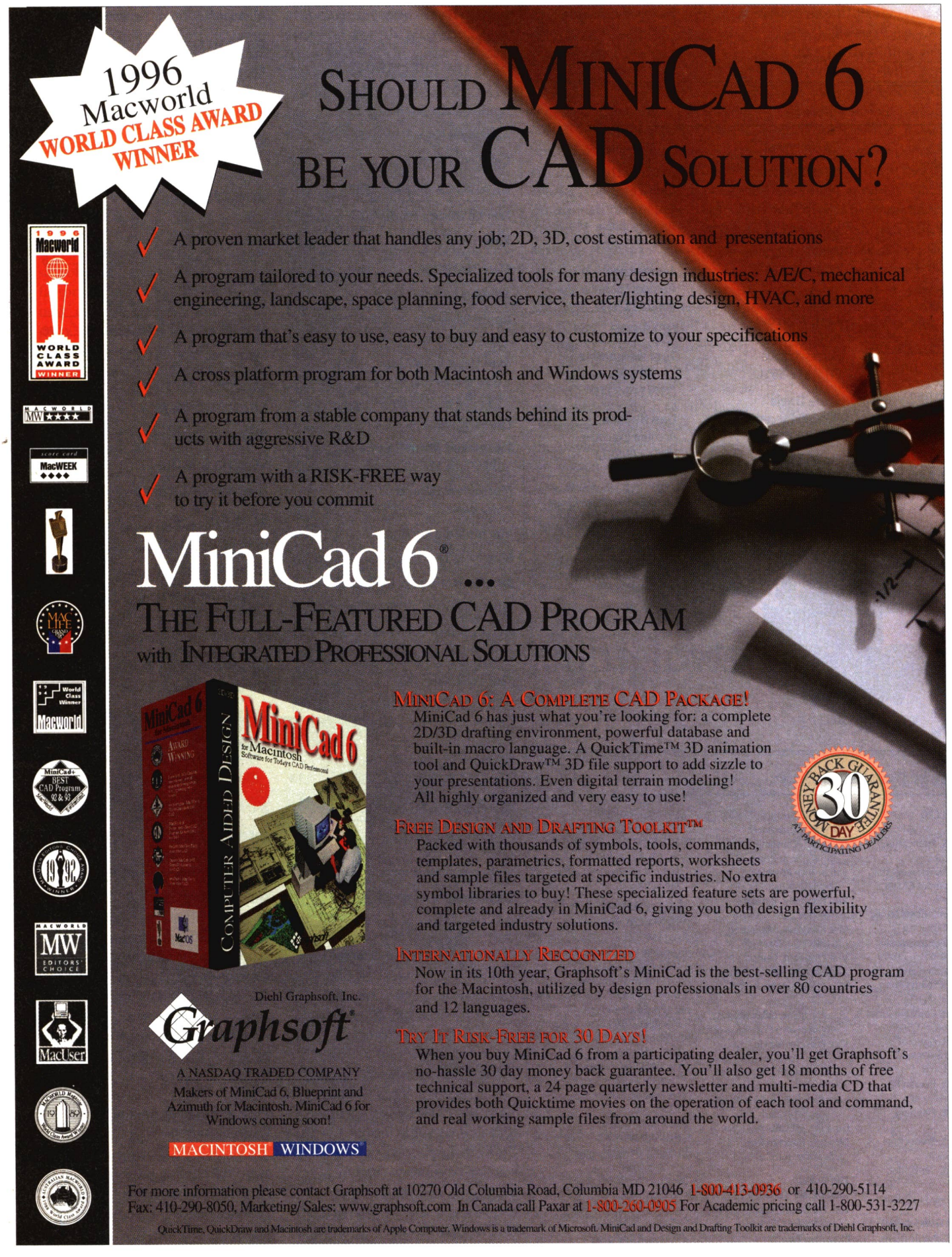
Wintel, eh?

Corel notwithstanding, the Knife finds plenty of circumstantial evidence to shore up his xenophobic attitude toward the Canadian Menace, which he has always maintained is a threat to the Mac Way of Life. Take Newbridge Networks, the latest defector from the Mac Bloc. The Knife's double agents within the Royal Canadian Mounted Police report that the Kanata, Ontario-based company plans to cash in all 3,000 of its Macs for Windows boxes.

Domino theory

And while we're on the subject of foreign infiltration: Disheveled loner Microsoft apparently decided to provide an object lesson on the hazards of Word macro viruses this month by booby-trapping its own Professional Developers Conference CD-ROM. The Knife's associates in the postal service report that 4,000 copies of the infected disc made it into developers' hands. □

Can't get your inside information into The New York Times, The Washington Post or Penthouse? Perhaps the Knife will offer a better forum. Call (415) 243-3544; fax (415) 243-3651; mac_the_knife@macweek.com.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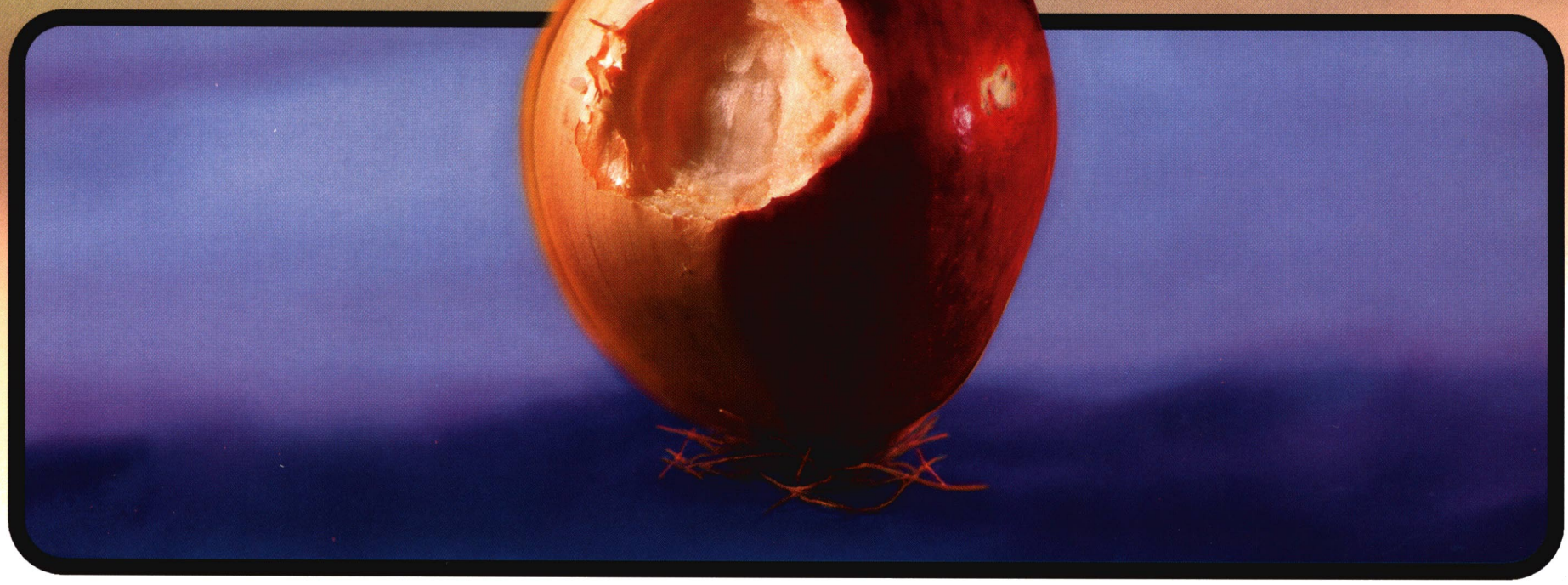

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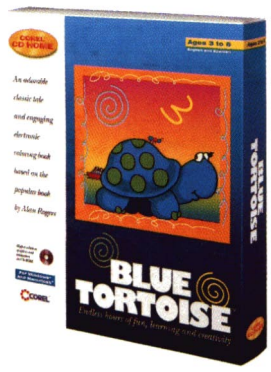

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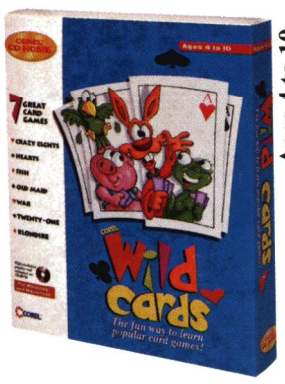

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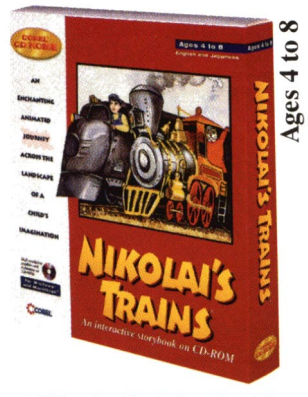

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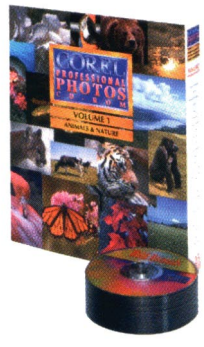

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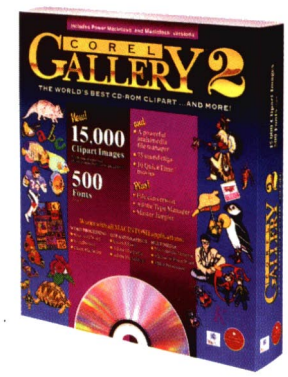

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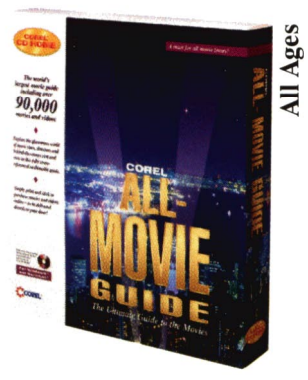

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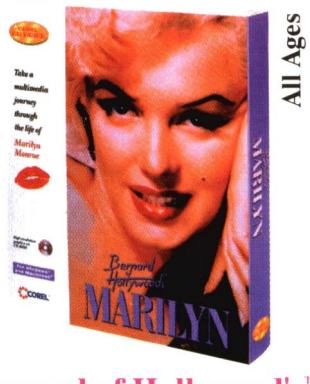

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